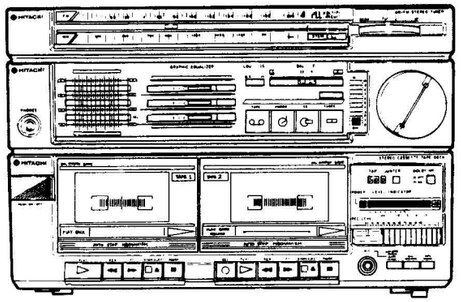
HITACHI
SERVICE MANUAL

TY **No. 563EF**

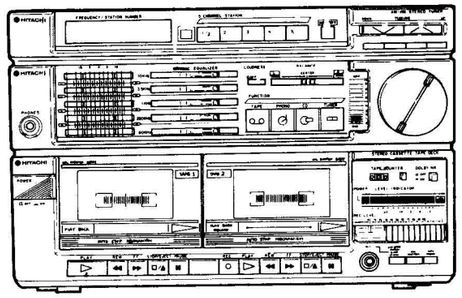
MD18 (HRD-MD18 / HT-MD28) [ES, BS, ZS, AU, EW]

MD28 (HRD-MD28 / HT-MD28) [US, CS, ES, BS, ZS, AU, EW]

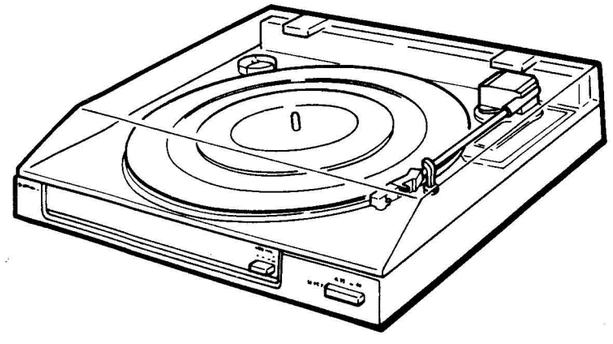
HRD-MD18



HRD-MD28



HT-MD28



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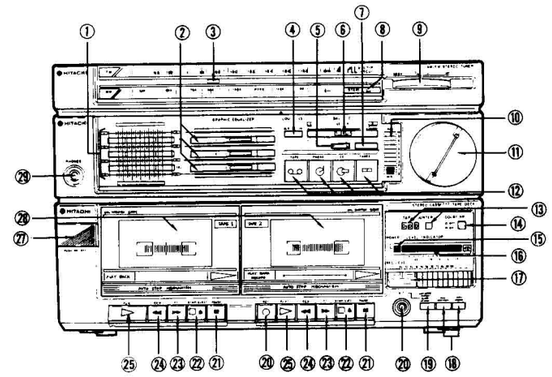
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

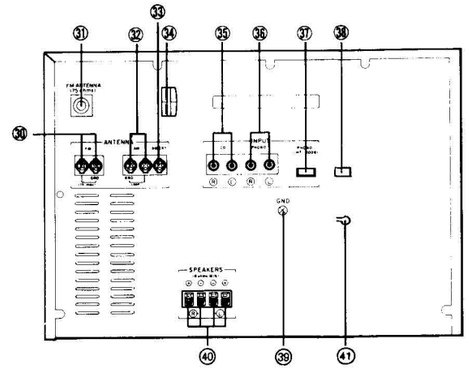
STEREO TUNER-AMPLIFIER DOUBLE CASSETTE RECORDER

July 1987 **TOYOKAWA WORKS**

KEY TO ILLUSTRATIONS · LEGENDES DES ILLUSTRATIONS

HRD-MD18

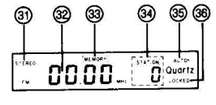


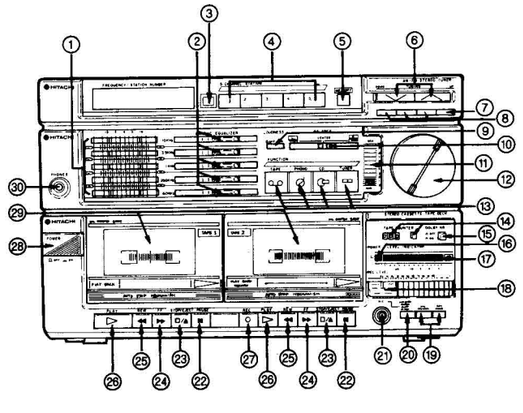


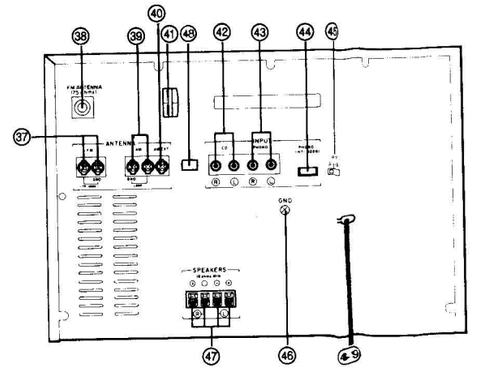
1. Graphic equalizer indicators
2. Graphic equalizer controls
3. Dial pointer
4. Loudness switch
5. MW/LW selector
6. Balance control
7. FM/AM selector
8. FM stereo indicator
9. Tuning control
10. Volume indicator
11. Volume control
12. Function selector
13. Tape counter/Reset button
14. Dolby NR switch
15. Power indicator
16. Level indicator
17. Record level control
18. Tape selector
19. High speed dubbing switch
20. Microphone jack
21. Pause button (▮▮)
22. Stop/Eject button (□ ⏏)
23. Fast forward button (▶▶)
24. Rewind button (◀◀)
25. Playback button (▷)
26. Recording button (○)
27. Power switch
28. Cassette holders
29. Headphone jack
30. FM antenna (aerial) terminals (75 ohms) (except ZS)
31. FM antenna (aerial) socket (75 ohms)
32. AM loop antenna terminals
33. AM external antenna terminal
34. AM loop antenna holder
35. CD input jacks
36. PHONO input jacks
37. PHONO terminal (for HT-MD28 only)
38. Radio interference frequency (RIF) cancel switch (for BS, ES)
39. Ground terminal
40. Speaker terminals
41. Voltage selector switch (for EW)

1. Voyants de l'égaliseur graphique
2. Commandes de l'égaliseur graphique
3. Indicateur à cadran
4. Commutateur de compensation physiologique
5. Sélecteur PO/GO
6. Commande de balance
7. Sélecteur MF/MA
8. Voyant stéréo MF
9. Commande de syntonisation
10. Voyant du volume
11. Commande du volume
12. Sélecteur de fonction
13. Compteur de bande/touche de remise à zéro
14. Commutateur de réduction de bruit Dolby NR
15. Voyant d'alimentation
16. Voyant de niveau
17. Commande du niveau d'enregistrement
18. Sélecteur de bande
19. Commutateur pour le copiage rapide
20. Prise de microphone
21. Touche de pause (▮▮)
22. Touche d'arrêt/éjection (Stop/eject) (□ ⏏)
23. Touche d'avancée rapide (▶▶)
24. Touche de rembobinage rapide (◀◀)
25. Touche de reproduction (▷)
26. Touche d'enregistrement (○)
27. Commutateur d'alimentation
28. Compartiments à cassette
29. Prise de casque
30. Bornes de l'antenne MF (75 ohms) (sauf pour ZS)
31. Emboîture de l'antenne MF (75 ohms)
32. Bornes de l'antenne boucle MA
33. Borne de l'antenne MA extérieure
34. Support de l'antenne boucle MA
35. Prises d'entrée CD (disques compacts)
36. Prises d'entrée PHONO
37. Borne PHONO (pour le HT-MD28 seulement)
38. Commutateur d'annulation de fréquences radio parasites (RIF) (pour BS, ES)
39. Borne à la terre
40. Bornes des haut-parleurs
41. Sélecteur de tension (pour EW)

HRD-MD28



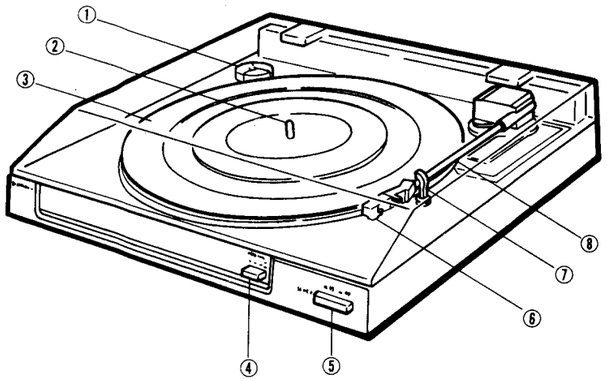




1. Graphic equalizer indicators
2. Graphic equalizer controls
3. Shift key (for BS, ES (France))
4. Station keys
5. Memory write key
6. Tuning keys
7. FM mode key
8. Band selector
9. Loudness switch
10. Balance control
11. Volume indicator
12. Volume control
13. Function selector
14. Tape counter/Reset button
15. Dolby NR switch
16. Power indicator
17. Level indicator
18. Record level control
19. Tape selector
20. High speed dubbing switch
21. Microphone jack
22. Pause button (❚❚)
23. Stop/Eject button (□▲)
24. Fast forward button (▶▶)
25. Rewind button (◀◀)
26. Playback button (▷)
27. Recording button (○)
28. Power switch
29. Cassette holders
30. Headphones jack
31. FM stereo indicator
32. Frequency display
33. Memory indicator
34. Station display
35. FM mode "Auto" indicator
36. Locked indicator
37. FM antenna (aerial) terminals (75 ohms) (except ZS)
38. FM antenna (aerial) jack (75 ohms)
39. AM loop antenna terminals
40. AM external antenna terminal
41. AM loop antenna holder
42. CD input jacks
43. PHONO input jacks
44. PHONO terminal (For HT-MD28 only)
45. Radio interference frequency (RIF) cancel switch (for BS, US, ES, ES (France))
46. Ground terminal
47. Speaker terminals
48. AM spacing selector (for EW)
49. Voltage selector (for EW)

1. Voyants de l'égaliseur graphique
2. Commandes de l'égaliseur graphique
3. Touche d'alternance (pour BS.ES (France))
4. Touches de station
5. Touche d'écriture en mémoire
6. Touches de syntonisation
7. Touche de mode MF
8. Sélecteur de gamme
9. Commutateur de compensation physiologique
10. Commande de la balance
11. Voyant du volume
12. Commande du volume
13. Sélecteur de fonction
14. Compteur de bande/touche de remise à zéro
15. Commutateur de réduction de bruit Dolby NR
16. Voyant d'alimentation
17. Voyant du niveau
18. Commande du niveau d'enregistrement
19. Sélecteur de bande
20. Commutateur pour le copiage rapide
21. Prise de microphone
22. Touche de pause (❚❚)
23. Touche d'arrêt/éjection (Stop/eject) (□▲)
24. Touche d'avancée rapide (▶▶)
25. Touche de rembobinage rapide (◀◀)
26. Touche de reproduction (▷)
27. Touche d'enregistrement (○)
28. Commutateur de mise sous tension
29. Compartiments à cassette
30. Prise de casque
31. Voyant MF stereo
32. Affichage des fréquences
33. Voyant de la mémoire
34. Affichage des stations
35. Voyant "Auto" du mode MF
36. Voyang "Locked" (verrouillé)
37. Bornes de l'antenne MF (75 ohms) (sauf ZS)
38. Prise de l'antenne MF (75 ohms)
39. Bornes de l'antenne boucle MA
40. Borne de l'antenne extérieure MA
41. Support de l'antenne boucle MA
42. Prise d'entrée CD (lecteur disques compacts)
43. Prises d'entrée PHONO
44. Borne PHONO (pour HT-MD28 seulement)
45. Commutateur d'annulation des fréquences radio parasites (RIF) (pour BS, VS, ES, ES (France))
46. Borne à la terre
47. Bornes des haut-parleurs
48. Sélecteur de compensation MA (pour EW)
49. Sélecteur de tension (pour EW)

HT-MD28

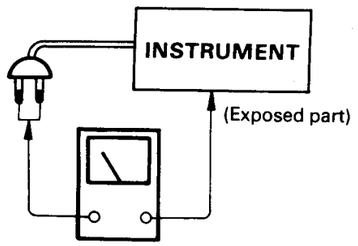


① 45 rpm Adaptor
② Disc guide
③ Platter
④ Cueing button
⑤ Speed select button
⑥ Stylus
⑦ Arm rest
⑧ Tonearm

① Adaptateur 45 tours
② Guide du disque
③ Plateau
④ Touche de repérage
⑤ Touche de sélection de la vitesse
⑥ Pointe de lecture
⑦ Support du bras
⑧ Bras

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

● **Checking method**
Power switch is set to ON.
Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Ground terminal, Knob, Cover, etc. where the customer is easy to touch) and check that the resistance value is 500 kohms or more.



Insulation tester (DC500V)

SAFETY PRECAUTION

The following precautions should be observed when servicing.
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with ⚠ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

GENERAL SPECIFICATIONS

Power Supply:
AC120V, 60Hz [For US, CS]
AC220V, 50Hz [For KS, ZS, VS, ES, ES (France)]
AC240V, 50Hz [For BS, AU]
AC120V/220V/240V, 50/60 Hz [For EW]

Power Consumption:

HRD-MD18
95W [For BS]
180W [For KS, ES, ZS, AU, EW]

HRD-MD28
145W [For US, CS]
180W [For BS, KS, ES, ES(France), ZS, VS, AU, EW]

Dimensions: 370 (W) x 246 (H) x 264 (D) mm [14-9/16"(W) x 9-11/16" (H) x 10-3/8" (D)]

Weight: 7.0 kg (15 lbs. 6 oz.)

AMPLIFIER SECTION

HRD-MD18 (BS)

Audio Output: 15Wx2 (8 ohms. T.H.D. 5% both channel driven, 1 kHz)

Music Power Output: 30W x 2 (8 ohms, 1 kHz)

HRD-MD18 (KS, ES, ES (France) ZS, SA, EW)

HRD-MD28

Audio Output: 30 watts* per channel, min. RMS, at 8 ohms from 100 Hz to 10 kHz, with more than 2% total harmonic distortion.
30W x 2 (8 ohms, T.H.D. 5% both channel driven, 1 kHz)

Music Power Output: 60W x 2 (8 ohms, 1 kHz) [Except US]

Tone Control:
100 Hz ± 8 dB
1 kHz ± 8 dB
10 kHz ± 8 dB [HRD-MD18]
63 Hz ± 8 dB
250 Hz ± 8 dB
1 kHz ± 8 dB
4 kHz ± 8 dB
16 kHz ± 8 dB [HRD-MD28]

HRD-MD18/28

Input Sensitivity and Impedance:
PHONO 3.5 mV/50 kohms
CD 150 mV/50 kohms
MIC 1mV/4 kohms

Output Impedance:
Speaker: 8 ~ 16 ohms
Headphones: 8 ohms

TUNER SECTION

HRD-MD18

Circuit System: FM/AM 2-band [For KS, ZS, SA, EW]
FM/MW/LW 3-band superheterodyne [For BS, ES]

Tuning Range:
FM: 87.5 to 108 MHz
AM (MW): 530 to 1605 kHz
LW: 150 to 285 kHz [For BS, ES]

IHF Sensitivity
FM: 5 μV (S/N 26 dB)
AM (MW): 600 μV/m (S/N 20 dB)
LW: 2,500 μV/m (S/N 20 dB) [For BS, ES]

HRD-MD28

Circuit System: FM/AM 2-band digital synthesizer [For US, CS, KS, ZS, EW, SA]
FM/MW/LW 3-band superheterodyne [For BS, VS, ES, ES(France)]

Tuning Range:
FM: 87.9 to 107.9 MHz [For US]
87.50 to 108.00 MHz [Except US]
AM: 530 to 1620 kHz [For US]
MW: 522 to 1611 kHz [Except US]
LW: 153 to 281 kHz [For BS, ES, ES(France), VS]

IHF Sensitivity:
FM: 1 μV (S/N 30 dB) [For US, CS]
1 μV (S/N 26 dB) [Except US, CS, ZS]
2 μV (S/N 26 dB) [For ZS]
AM (MW): 600 μV/m (S/N 20 dB)
LW: 2500 μV/m (S/N 20 dB)
For [BS, ES (France), VS]

HRD-MD18/28

FM Stereo separation: 35 dB

FM S/N (Signal to noise Ratio): 60 dB

Antennas:
FM: External antenna (aerial)
Power supply cord antenna [For US, CS]
AM (MW/LW): Loop antenna
Out door antenna

TAPE DECK SECTION

Cassette tape deck
Tape: Cassette tape
Tape speed: 4.75 cm/s (1-7/8")
Recording System and Bias Frequency: AC bias, 85 kHz
Track System: 4 track 2 channel
Erasing System: AC erase
Frequency Response:
Normal: 70 Hz to 14 kHz
CrO_2: 70 Hz to 14 kHz
Metal: 70 Hz to 15 kHz (HRD-MD28 only)

Signal-to-Noise Ratio: Dolby ON: 58 dB
OFF: 50 dB
Crosstalk: 60 dB
Erase Ratio: 65 dB
Motor: DC Motor

SPEAKER SECTION (For SA, EW)

Unit: (16 cm woofer + 5 cm tweeter) x 2
Type: Bass-reflex type
Dimensions: 230 (W) x 363 (H) x 185 (D) mm
Weight: 2.8 kg x 2

Specifications and design may be changed without notice for improvement.

* Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers.

HT-MD28

Type	2-speed belt drive system
Platter	295 mm diameter platter
Motor	DC motor
Speed	2 speeds, 33-1/3 and 45 rpm
Signal to noise ratio	56 dB (DIN-B)
Wow and Flutter	0.07% (WRMS)
Tonearm	
Effective length	205 mm
When a HITACHI cartridge is attached	
Cartridge	Moving Magnet
Output voltage	2.5 mV
Crosstalk	25 dB (1 kHz)
Load Impedance	47 kohm 100 pF
Stylus tip	Diamond stylus
Power source	DC 12V (Secondary supply from HRD-MD 18 or HRD-MD28)
Power consumption	3 watts
Dimensions	370 (W) x 89 (H) x 340 (D) mm
Weight	3 kg

PRECAUTIONS DE SECURITE

Les précautions suivantes doivent être observées chaque fois qu'une réparation est à faire.

1. De nombreux composants de l'appareil répondant caractéristiquement aux normes de sécurité, utilisez toujours des pièces de rechange d'origine Hitachi. En particulier des pièces d'importance critique ne devront pas être remplacées par des pièces d'autres fabricants.
   Ces pièces critiques sont marquées du symbole — dans le schéma de montage et sur le schéma de plaques de câblage.
2. Avant de redonner au client son appareil réparé, le technicien devra procéder à une vérification complète de l'appareil pour s'assurer qu'il ne présente aucun risque d'électrocution.

FICHE TECHNIQUE

GENERALITES

Alimentation: CA120V, 60Hz [pour US, CS]
CA220V, 50Hz [pour KS, ZS, VS, ES (France)]
CA240V, 50Hz [pour BS, AU]
CA120V/220V/240V, 50/60Hz [pour EW]

Consommation:

HRD-MD18: 95W [pour BS]
180W
[pour KS, ES, ZS, AU, EW, ES]

HRD-MD28: 145W [pour US, CS]
189W [pour BS, KS, ES, ES (France), ZS, VS, AU, EW]

Dimensions: 370(L) x 246(H) x 264(P) mm

Poids: 7,0 kg

SECTION AMPLIFICATEUR

HRD-MD18 (BS)

Sortie audio: 15W x 2 (8 ohms, distorsion harmonique totale 5% sur les deus canaux, 1 kHz)

Sortie de puissance: 30W x 2 (8 ohms, 1 kHz)

HRD-MD18 (KS, ES, ES (France) ZS, SA, EW)

HRD-MD28

Sortie audio: 30 watts*/canal, min. RMS, à 8 ohms de 100 Hz à 10 Hz, avec plus de 2% de distorsion harmonique totale.
30W x 2 (8 ohms, distorsion harmonique totale 5% sur les deux canaux, 1 kHz)

Sortie de puissance de la musique: 60W x 2 (8 ohms, 1 kHz) [excepté US]

Commande des tonalités:

[HRD-MD18]
100 kHz±8 dB
1 kHz±8 dB
10 kHz±8 dB

[HRD-MD28]
63 Hz±8 dB
250 Hz±8 dB
1 kHz±8 dB
4 kHz±8 dB
16 kHz±8 dB

HRD-MD18/28

Sensibilité et impédance de sortie: PHONO 3,5 mV/50 kohms
CD: 150 mV/50 kohms
MIC: 1 mV/4 kohms
Haut-parleur: 8 ~ 16 ohms

Impédance de sortie: Casque: 8 ohms

SECTION TUNER

HRD-MD18

Système de circuits: MF/MA 2-gammes [pour KS, ZS, SA, EW]
MF/PO/GO 3 gammes superhétérodyne [pour BS, ES]

Portée d'accord: MF: 87, 5 à 108 MHz
MA(PO): 530 à 1605 kHz
GO: 150 à 285 kHz [pour BS, ES]

Sensibilité IHF: MF: 5 μV (S/B 26 dB)
MA (PO): 600 μV/m (S/B 20 dB)
GO: 2500 μV/m (S/B 20 dB) [pour BS, ES]

HRD-MD28

Système de circuits: MF/MA 2 gammes superhétérodyne [pour US, CS, KS, ZS, EW, SA]
MF/PO/GO 3 gammes superhétérodyne [pour BS, VS, ES, ES (France)]

Portée d'accord: MF: 87, 9 à 107,9 MHz [pour US]
87, 50 à 108,00 MHz [sauf US]
MA: 530 à 1620 kHz [pour US]
PO: 522 à 1611 kHz [sauf US]
GO: 153 à 281 kHz [pour BS, ES (France), VS]

Sensibilité IHF: MF: 1 μV (S/B 30 dB) [pour US, CS]
1 μV (S/B 26 dB) (sauf US, CS, ZS)
2 μV (S/B 26 dB) [pour ZS]
MA (PO): 600 μV/m (S/B 20 dB)
GO: 2500 μV/m (S/B 20 dB) [pour BS, ES (Fance), VS]

HRD-MD18/28

Séparation stéréo MF: 35 dB
Rapport signal/bruit MF: 60 dB
Antennes: MF: antenne extérieure
Antenne à cordon secteur [pour US, CS]
MA (PO/GO): Antenne à boucle
Antenne extérieure

SECTION MAGNETOCASSEE

Magnétocassette	
Bande:	Bande cassette
Vitesse de bande:	4,75 cm/s
Système d'enregistrement et fréquence de polarisation:	Polarisation, CA 85 kHz
Système de piste:	4 pistes, 2 canaux
Système d'effacement:	Effacement CA
Réponse en fréquence:	Normal: 70 Hz à 14 kHz Chrome: 70 Hz à 14 kHz Métal: 70 Hz à 15 kHz (HRD-MD 28 seulement)
Rapport signal/bruit:	Avec Dolby: 58 dB Sans Dolby: 50 dB
Transmodulation:	60 dB
Coefficient d'effacement:	65 dB
Moteur:	Moteur CC

SECTION HAUT–PARLEUR (POUR SA, EW)

Appareil:	(transducteur de graves 16 cm + transducteur d'aigües 5 cm) x 2
Type:	Bass-reflex
Dimension:	230(L) x 363(H) x 185(P) mm
Poids:	2,8 kg x 2

Aux fins d'améliorations, la fiche technique et l'aspect de ces produits sont susceptibles de modifications sans préavis.

*Mesuré conformément aux régulations dela Federal Trade Commission relatives à la sortie de puissance devant être fournie par des amplificateurs.

HT-MD28

Type	Système 2 vitesses à commande par courroie
Plateau	Plateau de 295 mm de diamètre
Moteur	Moteur CC
Vitesse	2 vitesses, 33-1/3 et 45 tours
Rapport signal/bruit:	56 dB (DIN-B)
Pleur et scintillement	0,007%(WRMS)
Bras de lecture	
Longueur effective	205 mm
Lorsqu'une cellule Hitachi est incorporée	
Cellule	Aimant mobile
Tension de sortie	2,5 mV
Transmodulation	25 dB (1 kHz)
Impédance de charge	45 kohms 100 pF
Pointe de lecture	Diamant
Source d'alimentation	CC 12V (alimentation secondaire provenant de HRD-MD 18 ou HRD-MD 28)
Consommation	3 watts
Dimensions	370(L) x 89(H) x 340(P) mm
Poids	3 kg

DISASSEMBLY

HRD-MD18

1. **Removing the Upper Cover (Fig. 1)**
   Remove the 6 mounting screws Ⓐ and 3 mounting screws Ⓑ.

2. **Removing the Rear Plate (Fig. 2)**
   After removing the upper cover, remove the 4 mounting screws Ⓒ and the 2 connectors of the FM antenna terminals. For EW version, remove the screw Ⓡ moreover.

3. **Removing the TD P.W.B. (Fig. 2)**
   After removing the rear plate, remove the 6 mounting screws Ⓓ , screw Ⓣ, 10 connectors and 2 claws, then remove the LED P.W.B. and pull it toward you slightly.
   (At the same time, the 4 FUNCTION knobs are also removed.)
   Then proceed to the REC spring removal.

4. **Removing the PA P.W.B. (Fig. 3)**
   After removing the TD P.W.B., remove the 2 screws Ⓕ and 2 screws Ⓖ retaining the transformer and 2 screws Ⓗ retaining the heat sink holder. Then remove the 3 connectors.

5. **Removing the GE P.W.B. (Fig. 3)**
   Remove the 6 mounting screws Ⓘ to remove the GE P.W.B. after removing the pulley fixing screw Ⓙ and the pulley.
   Remove the REC wire and REC lever Ⓑ, before removing the GE P.W.B.

6. **Removing the Cassette Chassis (Fig. 3)**
   After removing the GE P.W.B., remove the cassette lid and 6 mounting screws Ⓚ.

HRD-MD28

1. **Removing the Upper Cover (Fig. 1)**
   Same as the HRD-MD18.

2. **Removing the Rear Plate (Fig. 4)**
   After removing the upper cover, remove the 4 mounting screws Ⓛ and the connector of the FM antenna terminals. For EW version, remove the screw Ⓢ moreover.

3. **Removing the TD P.W.B. (Fig. 4)**
   After removing the rear plate, remove the 6 mounting screws Ⓜ and 9 connectors, and then pull the TD P.W.B. toward you slightly.
   (At the same time, the 4 knobs are also removed.)
   Then, proceed to the REC spring removal.

4. **Removing the PA P.W.B. (Fig. 5)**
   After removing the TD P.W.B., remove the 2 screws Ⓝ and 2 screws Ⓞ retaining the transformer, and the 2 screws Ⓟ retaining the heat sink holder. Then remove the 3 connectors.
   tors.

5. **Removing the GE P.W.B. (Fig. 5)**
   Remove the 9 mounting screws Ⓠ .
   Remove the REC wire and REC lever Ⓑ, before removing the GE P.W.B. .

6. **Removing the Cassette Chassis (Fig. 5)**
   Same as the HRD-MD18.

DEMONTAGE

HRD-MD18

1. **Retrait du couvercle supérieur (Fig. 1)**
   Retirez les six vis de montage Ⓐ et trois vis de montage Ⓑ

2. **Retrait de la plaque arrière (Fig. 2)**
   Après avoir retiré le couvercle supérieur, retirez les quatre vis de montage Ⓒ et les deux connecteurs des bornes de l'antenne MF. Pour la version EW, retirez également la vis Ⓡ.

3. **Retrait de la PCI (plaquette de circuit imprimé) TD (Fig. 2)**
   Après avoir retiré la plaque arrière, retirez les six vis de montage Ⓓ, la vis Ⓣ, les dix connecteurs et les deux pattes, puis retirez la plaquette (P.C.I) à diode LED et tirez-la légèrement vers vous.
   (En même temps, vous retirerez les quatre boutons de fonction FUNCTION.)
   Puis procédez au retrait du ressort d'enregistrement (REC).

4. **Retrait de la P.C.I. PA (Fig. 3)**
   Après avoir retiré la P.C.I. TD, retirez les deux vis Ⓕ, et deux vis Ⓖ qui maintiennent en place le transformateur, ainsi que deux vis Ⓗ maintenant en place le support du puits de chaleur. Puis retirez les trois connecteurs.

5. **Retrait de la P.C.I. GE (Fig. 3)**
   Retirez les six vis de montage Ⓘ pour retirer la P.C.I. GE après avoir retiré la vis de fixation de la poulie de cadran Ⓙ et la poulie elle-même.
   Enlevez le câble d'enregistrement et le levier d'enregistrement Ⓑ avant d'enlever la P.C.I. GE.

6. **Retrait du coffret (Fig. 3)**
   Après avoir retiré la P.C.I. GE, retirez couvercle du compartiment à cassette et les six vis de montage Ⓚ.

HRD-MD28

1. **Retrait du couvercle supérieur (Fig. 1)**
   Même procédure que pour le HRD-MD18.

2. **Retrait de la plaque arrière (Fig. 4)**
   Après avoir retiré le couvercle supérieur, retirez les quatre vis de montage Ⓛ, et le connecteur des bornes de l'antenne MF. Pour la version EW, retirez également la vis Ⓢ.

3. **Retrait de la P.C.I. TD (Fig. 4)**
   Après avoir retiré la plaque arrière, retirez les six vis de montage Ⓜ et neuf connecteurs, puis tirez la P.C.I. légèrement vers vous.
   (Au même moment, les quatre boutons de FONCTION sont également retirés.)
   Puis procédez au retrait du ressort d'enregistrement (REC).

4. **Retrait de la P.C.I. PA (Fig. 5)**
   Après avoir retiré la P.C.I. TD, retirez les deux vis Ⓝ et les deux vis Ⓞ maintenant en place le transformateur, ainsi que les deux vis Ⓟ maintenant en place le support du puits de chaleur. Puis retirez les trois connecteurs.

5. **Retrait de la P.C.I. GE (Fig. 5)**
   Retirez les neuf vis de montage Ⓠ.
   Enlevez le câble d'enregistrement et le levier d'enregistrement Ⓑ avant d'enlever la P.C.I. GE.

6. **Retrait du coffret (fig. 5)**
   Même procédure que pour le HRD-MD 18.

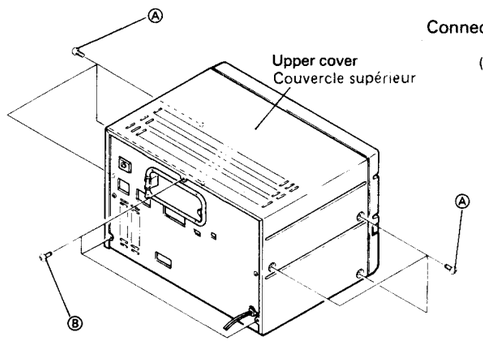


Fig.1

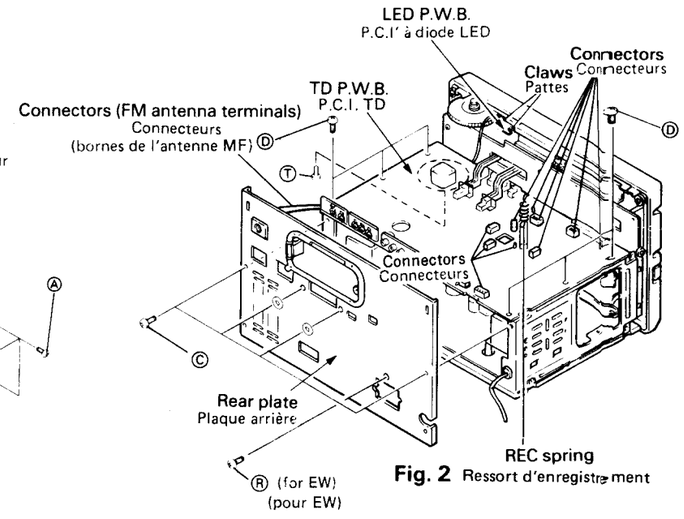


Fig. 2

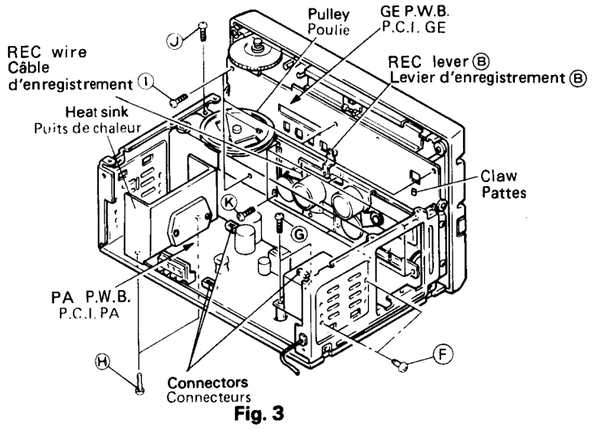


Fig. 3

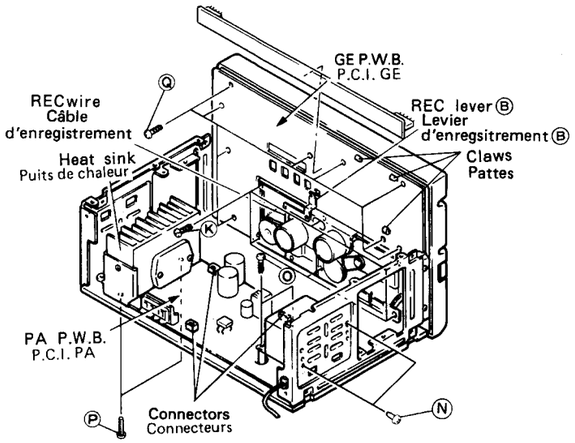


Fig. 5

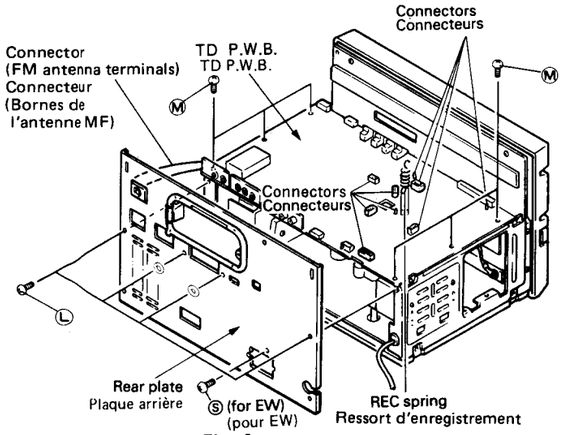


Fig. 4

DIAL CORD STRINGING

1. Rotate the tuning knob fully clockwise.
2. Thread the dial cord around the pulleys shown in the diagram in numerical order.

ENFILAGE DU CABLE DE CADRAN

1. Tournez le bouton de syntonisation à fond dans le sens des aiguilles d'une montre.
2. Enroulez le câble de cadran autour des poulies indiquées sur le diagramme dans leur ordre numérique.

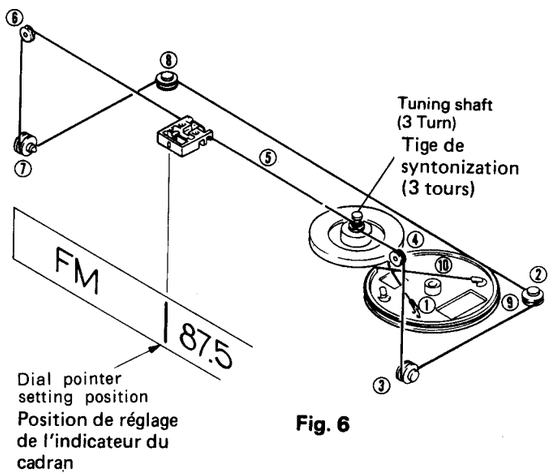
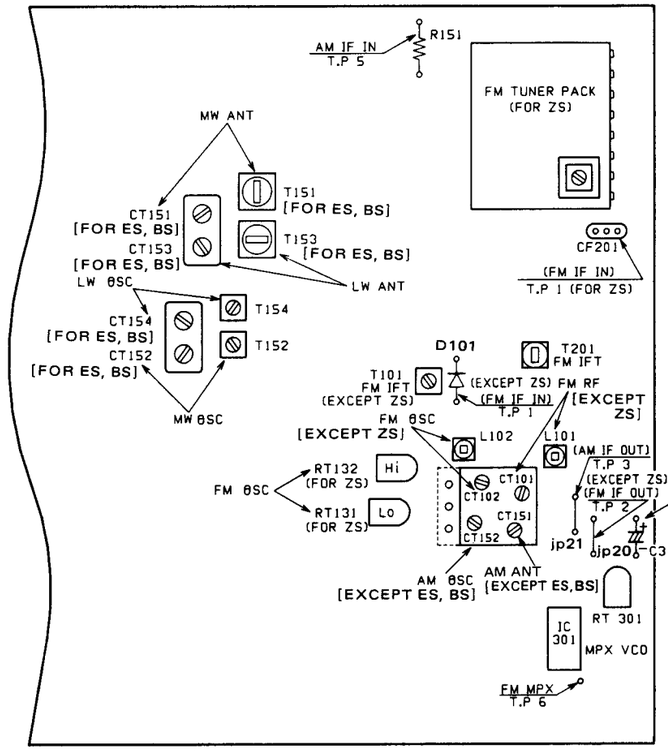


Fig. 6

ADJUSTMENT· REGLAGE

1. RADIO SECTION SECTION RADIO

HRD-MD18



FM Section

Step		Adjustment Item	Measuring Instrument and Connection: Measuring Instrument	Input Terminal	Output Terminal	Genescope or Signal Generator Frequency		Dial Pointer Position	Adjust	Reading
1	(1)	FM IF	Genescope (10.7 MHz)	TP. 1	TP. 2	10.7 MHz		Highest	T101	Note 1
	(2)	S-Curve							T201	Note 2
2	(1)	FM OSC (Covering)	● FM signal generator (400 Hz, 30% dev.) ● Oscilloscope ● VTVM	FM ANT 22.5 kHz DEV. 60dB	SP OUT	ZS	87.4 $^{+0.1}_{-0.15}$ MHz	Lowest	RT131 (for ZS) L102	Max
						Other	87.25±0.25 MHz			
	(2)					Other	108.25±0.25 MHz	Highest	RT132 (for ZS) CT102	
	(3)					Repeat steps (1) and (2)				
3 except ZS	(1)	FM ANT (Tracking)				90 MHz		90 MHz	L101	Max
	(2)					106 MHz		106 MHz	CT101	
	(3)					Repeat steps (1) and (2)				
4	(1)	MPX VCO (19 kHz)	Frequency counter	FM ANT 22.5 kHz DEV. 60 dB Non modulation	Connect via 100 kΩ registor	98 MHz		98 MHz	RT301	19 kHz ± 50 Hz

Section MF

Etape		Poste de réglage	Instrument de mesure et connexion			Fréquence du génescope ou du générateur de signaux		Position de l'indicateur du cadran	Réglez	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie					
1	(1)	FM IF (Moyenne fréquence MF)	Génescope (10,7 MHz)	TP. 1	TP. 2	10,7 MHz		Maximale (le plus haut possible)	T101	Remarque 1
	(2)	Courbe en S							T201	Remarque 2
2	(1)	FM OSC (oscillateur MF) (guipage)	• Générateur de signaux MF (400 Hz, dév.) • Oscilloscope • VTVM (voltmètre électronique)	FM ANT (antenne MF) 22,5 kHz dév. 60 dB	SP hors circuit (OUT)	ZS	87,4 +0.1 −0.15 MHz	Minimale (le plus bas possible)	RT 131 (pour ZS) L 102	Max
						Autre	87,25 ±0,25 MHz			
	(2)					Autre	108,25 ±0,25 MHz	Maximale (le plus haut possible)	RT 132 (pour ZS) CT 102	
	(3)					Répétez les étapes (1) et (2)				
Sauf ZS 3	(1)	FM ANT (antenne MF) (alignement)				90 MHz		90 MHz	L101	Max
	(2)					106 MHz		106 MHz	CT101	
	(3)					Répétez les étapes (1) et (2)				
4	(1)	MPX VCO (oscillateur à fréquence réglée par variation de tension MPX) (19 kHz)	Compteur de fréquences	FM ANT (antenne MF) 22,5 kHz dév. 60 dB non-modulation	Connectez par enregistreur 100 kohms 98 MHz	98 MHz		98 MHz	RT301	19 kHz ± 50 Hz

Adjustment

Note 1: Using a sweep generator, input the weak signal (with a level causing noise on the IF waveform as shown in Fig. 6) so that the waveform becomes maximum and synmetrical.

Note 2: Generate the S-curve and adjust so that the A and B are symmetrical and linear as shown in Fig. 7.

Réglage

Remarque 1: A l'aide d'un générateur de balayage, introduisez le signal faible (à un niveau causant des parasites sur la forme d'onde intermédiaire (IF) comme le montre la figure 6), pour que la forme d'onde devient maximum et symmétrique.

Remarque 2: Générez la courbe en S et réglez de façon que les A et B soient symétrique et linéaires comme le montre la Fig. 7.

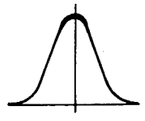


Fig. 6

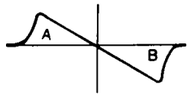


Fig. 7

AM Section

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	Genescope (455 kHz)	TP. 5	TP. 3				Note 3
	(2)								
2	(1)	MW OSC (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Loop antenna Note 4	SP. OUT	515 kHz	Lowest	T152	Max Note 4
	(2)					1.650 kHz	Highest	CT152	
	(3)					Repeat steps (1) and (2)			
3	(1)	MW ANT (Tracking)				600 kHz	600 kHz	T151	Max Note 4
	(2)					1.400 kHz	1.400 kHz	CT151	
	(3)					Repeat steps (1) and (2)			
4	(1)	LW OSC (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Loop antenna Note 4	SP. OUT	145 kHz	Lowest	T154	Max Note 4
	(2)					290 kHz	Highest	CT154	
	(3)					Repeat steps (1) and (2)			
5	(1)	LW ANT (Tracking)				160 kHz	160 kHz	T153	Note 4
	(2)					270 kHz	270 kHz	CT153	
	(3)								

Section MA

Etape		Poste de réglage	Instrument de mesure et connexion			Fréquence du génescope ou du générateur de signaux	Position de l'indicateur du cadran	. Réglez	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	AM IF (moynne fréquence MA)	Génescope (455 kHz)	TP. 5	TP. 3				Remarque3
	(2)								
2	(1)	MW OSC (oscillateur PO) (guipage)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	Antenna à boucle Remarque 4	SP.OUT (hors circuit)	515 kHz	Le plus bas possible	T152	Max Remarque 4
	(2)					1,650 kHz	Le plus haut possible	CT152	
						Répétez les fapes (1) et (2)			
3	(1)	MW ANT (antenne PO) (alignement)				600 kHz	600 kHz	T151	Max Remarque 4
	(2)					1,400 kHz	1,400 kHz	CT151	
	(3)					Répétez les étapes (1) et (2)			
4	(1)	LW OSC (oscillateur GO) (guipage)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	Antenna à boucle Remarque 4	SP.OUT (hors circuit)	145 kHz	Le plus bas possible	T154	Max Remarque 4
	(2)					290 kHz	Le plus haut possible	CT154	
	(3)					Répétez les étpas (1) to (2)			
5	(1)	LW ANT (antenne GO) (alignement)				160 kHz	160 kHz	T153	Remarque 4
	(2)					270 kHz	270 kHz	CT153	
	(3)								

Note 3: If the signal from the sweep generator is weak, make sure that the waveform becomes maximum and symmetrical as shown in Fig. 8.
Raise the level of the sweep generator, make sure the range at point Ⓐ becomes as flat as possible as shown in Fig. 9.

Note 4: Initially set the input level to 74 dB/m, and lower the level to minimum as required (approx. 60 dB/m) for progress of the adjustment. And adjust repeatedly so that the output is maximum at the specified frequency.

Remarque 3: Si le signal provenant du générateur de balayage est faible, assurez-vous que la forme d'onde devienne maximale et symétrique comme indiqué en figure 8.
Augmentez le niveau du générateur de balayage et vérifiez que le parcours en point Ⓐ est aussi plat que possible comme indiqué en figure 9.

Remarque 4: Placez d'abord le niveau d'entrée à 74 dB/m, et abiassez le niveau au minimum comme il vous l'est demandé (environ 60 dB/m) pour continuer le réglage. Réglez à plusieurs reprises jusqu'à ce que la sortie soit maximale à la fréquence spécifiée.

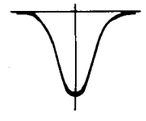


Fig. 8

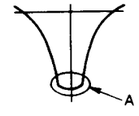
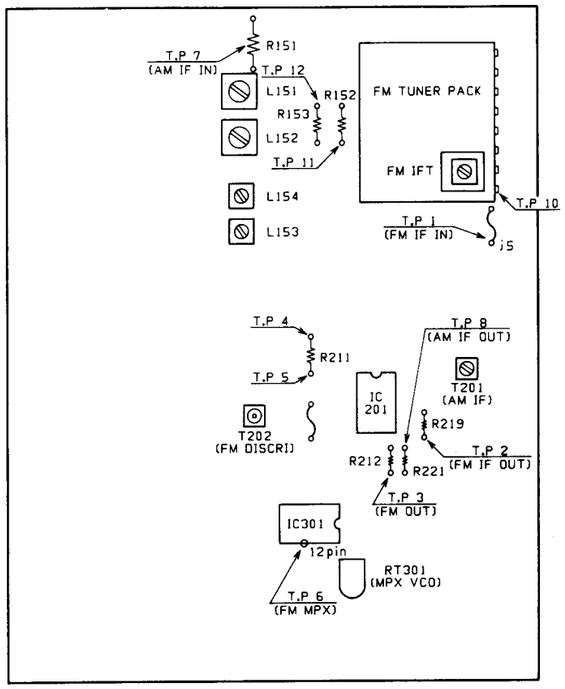


Fig. 9



FM Section

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	FM IF	Genescope (10.7 MHz)	TP. 1	TP. 2	10.7 MHz		FM IFT	Note 5
	(2)	S-Curve			TP. 3			—	Note 6
2	(1)	Discriminator	DC balance meter	FM ANT 22.5 kHz DEV. 60 dB	TP. 4 TP. 5	98 MHz 98.1 MHz	98 MHz 98.1 MHz	T202	0± 10mV
3	(1)	MPX VCO (19 kHz)		FM ANT 75 ohms 22.5 kHz DEV. 60 dB Non modulation	TP. 6 Connect via 100kΩ registor	98 MHz 98.1 MHz	98 MHz 98.1 MHz	RT301	19 kHz ±50 Hz

Section MF

Etape		Poste de réglage	Instrument de mesure et connexion			Fréquence du génescope ou générateur de signaux	Position de l'indicateur du cadran	Réglez	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	FM IF (moyenne fréquence MF)	Génescope (10,7 MHz)	TP. 1	TP. 2	10,7 MHz		MF IFT	Remarque 5
	(2)	Courbe en S			TP. 3			—	Remarque 6
2	(1)	Discriminateur	Mètre de balance CC	FM ANT (antenne MF) 22,5 kHz dév. 60 dB	TP. 4 TP. 5	98 MHz 98,1 MHz	98 MHz 98,1 MHz	T202	(0±10mV)
3	(1)	MPX VCO (oscillateur à fréquence réglée par variation de tension MPX) (19 kHz)		FM ANT (antenne MF) 75 ohms 22,5 kHz dév. 60 dB En non-modulation	TP. 6 Connectez par enregistreur 100 kohms	98 MHz 98,1 MHz	98 MHz 98,1 MHz	RT301	19 kHz ±50 Hz

Note 5: Using a sweep generator, input the weak signal (with a level causing noise on the IF waveform as shown in Fig. 10) so that the waveform becomes maximum and symmetrical.
If the IF waveform does not appeare or becomes as shown in Fig. 11, short the line between TP 4 and TP 5.

Note 6: Generate the S-curve and adjust so that the A and B are symmetrical and linear as shown in Fig. 12.

Remarque 5: A l'aide d'un générateur de balayage, entrez le signal faible (ayant un bruit générateur de niveau sur la forme d'onde moyenne fréquence comme indiqué en figure 10) de sorte que la forme d'onde devienne maximale et symétrique.
Si la forme d'onde moyenne fréquence n'apparaît pas ou devient semblable à la figure 11, raccourcissez la ligne entre TP 4 et TP 5.

Remarque 6: Générez la courbe en S de sorte que les A et B soient symétriques et linéaires comme indiqué en figure 12.

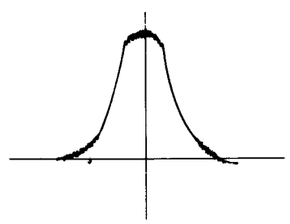


Fig. 10

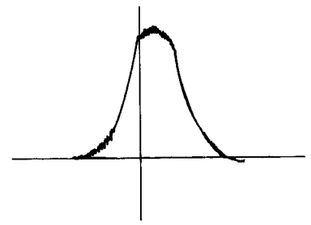


Fig. 11

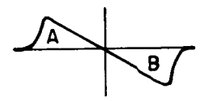


Fig. 12

AM Section

Step	Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	AM IF	Genescope (450 kHz)	TP. 7	TP. 8	450 kHz	Highest	T201	Note 7
2	MW OSC (Covering)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	—	TP. 11	[for US, CS]			
					522 kHz	522 kHz	L153	1.2V
					[except US, CS]			
					530 kHz	530 kHz	L153	1.25V
3	LW OSC (Covering)	● AM signal gentrator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	—	TP. 12	153 kHz	153 kHz	L154	1.2V
4	MW ANT (Tracking)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Loop antenna	SP OUT	600 kHz 603 kHz	600 kHz 603 kHz	L151	Max Note 8
5	LW ANT (Tracking)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Loop antenna	SP OUT	164 kHz	164 kHz	L152	Max Note 8

Note 7: If the signal from the sweep generator is weak, adjust so that the waveform becomes maximum and symmetrical as shown in Fig. 13.
Raise the level of the sweep generator so that the range at point Ⓐ becomes as flat as possible as shown in Fig. 14.

Note 8: Initially set the input level to 74 dB/m, and lower the level to minimum as required (approx. 60 dB/m) for progress of the adjustment. And adjust repeatedly so that the output is maximum at the specified frequency.

Section MA

Etape	Poste de réglage	Instrument de mesure et connexion			Fréquence du génescope ou du générateur de signaux	Position de l'indicateur du cadran	Réglez	Lecture
		Instrument de measure	Borne d'entrée	Borne de sortie				
1	MA IF	Génescope (450 kHz)	TP. 7	TP. 8	450 kHz	Le plus haut possible	T201	Remarque 7
2	MW OSC (oscillateur PO) (guipage)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	–	TP. 11	[Pour US, CS]			
					522 kHz	522 kHz	L153	1,2V
					[Sauf US, CS]			
					530 kHz	530 kHz	L153	1,25V
3	LW OSC (oscillateur GO) (guipage)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	–	TP. 12	153 kHz	153 kHz	L154	1,2V
4	MW ANT (antenne PO) (alignement)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	Antenne à boucle	SP OUT (hors circuit)	600 kHz 603 kHz	600 kHz 603 kHz	L151	Max Remarque 8
5	LW ANT (antenne GO) (alignement)	• Générateur de signaux MA (400 Hz, 30% de mod.) • VTVM (voltmètre électronique) • Oscilloscope	Antenne à boucle	SP OUT (hors circuit)	164 kHz	164 kHz	L152	Max Remarque 8

Remarque 7: Si le signal provenant du générateur de balayage est faible, réglez de sorte que la forme d'onde devienne maximale et symétrique comme indiqué en figure 13.
Augmentez le niveau du générateur de balayage de sorte que le parcours au point A soit aussi plat que possible comme indiqué en figure 14.

Remarque 8: Placez tout d'abord le niveau d'entrée à 74 dB/m, et abaissez le niveau au minimu comme il vous l'est demandé (environ 60 dB/m) pour continuer le réglage. Réglez à plusieurs reprises de façon à ce que la sortie soit maximale à la fréquence spécifiée.

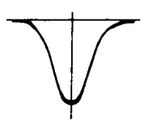


Fig. 13

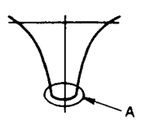
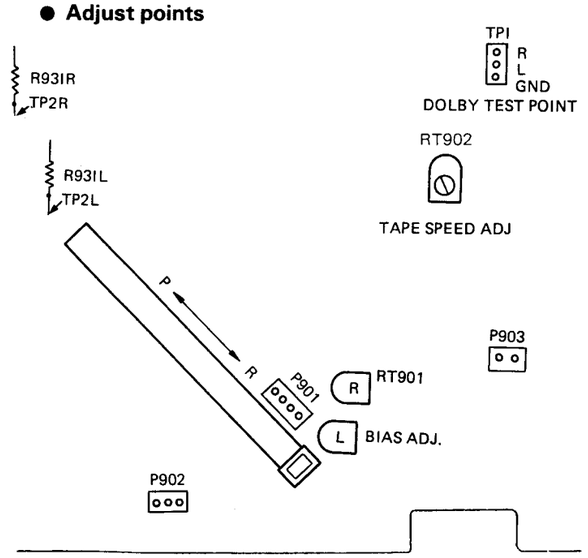


Fig. 14

2. TAPE TECK SECTION

● **Adjust points**

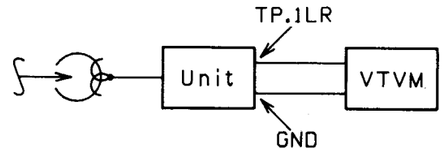


Symbol No.	Switches and Controls	Position
S903	DOLBY NR	OFF
S902	TAPE SELECTOR SW	NOR
RT901L, R	REC VOL	MAX
S905	Rif SW	A

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol.

(1) Head azimuth adjustment

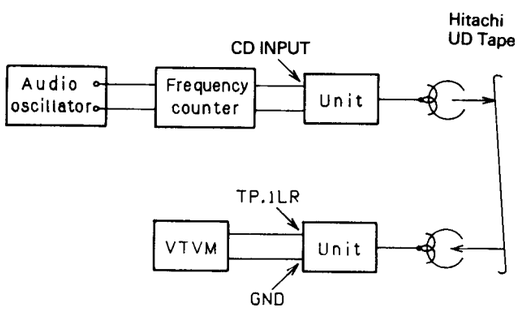
Setting: Playback mode.
Connection:



Adjustment:
Playback test tape (MTT-114, 10 kHz) and adjust the azimuth adjustment screw for maximum output however, if the peak level differs between the left and right channels, set it to the left-channel peak level. At this time, the difference between both channel peak levels should be within 3 dB.
After adjustment, lock the screw.

(2) Frequency characteristic adjustment (Bias adj.)

Setting: Recording/Playback mode
Connection:



Adjustment:
Record 400 Hz and 10 kHz signals at the level of −25 dB. Set the record mode, and if there is a difference of more than −25 dB ± 1.5 dB in output, adjust RT901L, R.
Measure the record/playback frequency characteristic of the UD tape at the level of −25 dB. Then make sure that the measured value is within the range of the specification.

(3) Dolby check

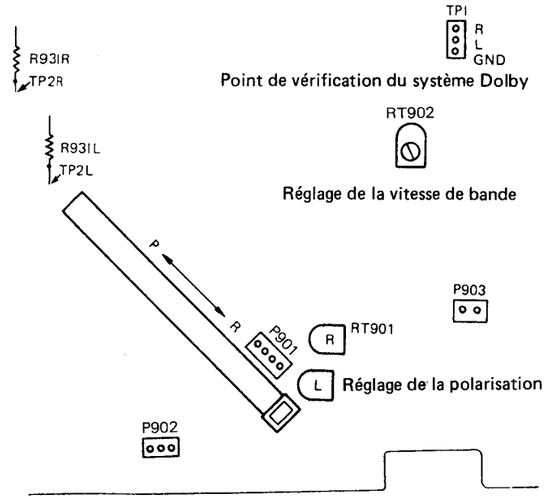
With the recording mode, apply 5 kHz input to the CD INPUT and set the voltage between the Dolby test point TP. 1LR and the ground to 300 mV −30 dB.
Check that the voltage between the TP. 2L, R and the ground is −21.8 dB ± 2 dB when the Dolby switch is turned ON.

(4) Tape speed adjustment

Item	Adjustment point	Procedure
Tape speed adjustment	RT902	Playback MTT-111N in TAPE 2 and adjust. (Adjust NOR) NOR →3000±30 Hz

2. SECTION MAGNETOCASSETTE

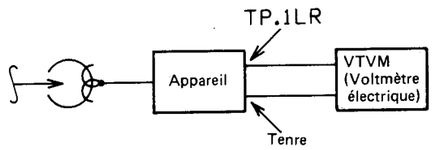
- **Points de réglage**



(1) Réglage de l'azimuth de tête

Mise au point: mode de reprodution

Connexion:



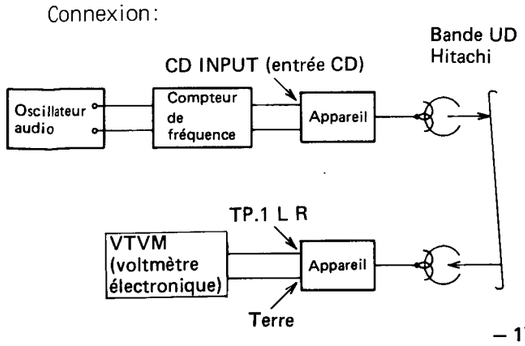
Réglage:

Reproduisez la bande d'essai (MTT-114, 10 kHz) et réglez la vis de réglage azimutal pour obtenir une sortie maximale, néanmoins, si le niveau de crête diffère entre le canal gauche et le canal droit, réglez-le au niveau de crête du canal gauche. A ce moment, la différence entre les deux niveaux de crête des canaux devrait être d'un ordre de 3 dB. Après réglage, vissez la vis.

(2) Réglage caractéristique des fréquences (réglage de la polarization)

Mise au point: mode d'enregistrement/reproduction

Connexion:



Neméro de symbole	Commutateurs et commandes	Position
S903	DOLBY NR	OFF (hors circuit)
S902	TAPE SELECTOR SW (sélecteur de bande)	NOR
RT901L, R	REC VOL (volume de l'enregistrement)	MAX
S905	Rif SW (Commutateur Rif)	A

Effectuez les réglages suivants dans l'ordre spécifié après nettoyage de la tête, du galet-presseur et du cabestan à l'aide d'un coton-tige imbibé d'alcool.

Réglage:

Enregistrez des signaux de 400 Hz et 10 kHz à un niveau de −25 dB. Placez en mode d'enregistrement, et si vous obtenez une différence de plus de −25 dB ±1,5 dB à la sortie, réglez RT901L, R.

Mesurez la fréquence d'enregistrement/reproduction caractéristique de la bande UD au niveau de −25 dB. Puis vérifiez que la valeur mesurée est comprise dans la gamme de spécification.

(3) Vérification du système Dolby

En mode d'enregistrement, appliquez une entrée de 5 kHz à l'entrée CD (CD INPUT) et réglez la tension entre le point de vérification Dolby TP.1 L, R et la terre à 300 mV −30 dB. Vérifiez que la tension entre le point TP.2L, R et la terre est −21,8 dB ±2 dB lorsque le commutateur Dolby est en circuit (ON).

(4) Réglage de la vitesse de bande

Point	Réglez	Mise au point
Réglage de la vitesse bande	RT902	Placez MTT-111N sur reproduction cassette 2 (TAPE 2) pour effectuer le réglage (réglez en position NOR). NOR (vitesse normale) →300±30Hz

3. TURNTABLE SECTION (HT-MD28)

Speed adjustment (Fig. 9)

If the specified speed cannot be obtained after replacing the motor, use the stroboscopic disk. (Adjustment is possible without removing the bottom plate.)

Note: Before adjustment, perform more than 10 minutes warmup with the turntable at 33-1/3 rpm. Carry out this adjustment in the order of (1) and (2).

(1) Set the speed to 33-1/3 rpm, and adjust Ⓐ so as to obtain the rated speed (33-1/3 rpm).

(2) Set the speed of 45 rpm, and adjust Ⓑ so as to obtain the rated speed (45 rpm).

3. SECTION PLATINE (HT-MD28)

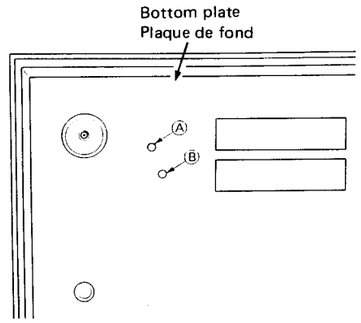
Réglage de la vitesse (Fig. 9)

Si la vitesse prévue ne peut être obtenue après avoir remplacé le moteur, utiliser le disque stroboscopique. (Réglage est possible sans enlever la plaque de fond.)

Remarque: Avant le réglage, effectuer un préchauffage au moins 10 minutes la table tournante étant à 33-1/3 tr/mn. Procéder à ce réglage dans l'ordre de (1) et (2).

(1) Mettre la vitesse sur 33-1/3 tr/mn et régler Ⓐ de manière à obtenir la vitesse nominale (33-1/3 tr/mn).

(2) Mettre la vitesse sur 45 tr/mn et régler Ⓑ de manière à obtenir la vitesse nominale(45 tr/mn).



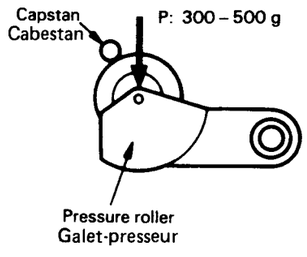
INSPECTION OF MECHANISM · INSPECTION DU MECANISME

Item	Checking item		Reference value	Remarks
1	Pressure of pressure roller		300 – 500g	Note
2	Take-up torque		30 – 60 g·cm	
3	Fast forward/Rewind torque		50g·cm or more	
4	Auto-Stop sensor operation force		40 – 75 g	
5	Brake torque		15 g·cm or more	Measured in stop mode
6	Back tension torque	Take-up	1 – 6 g·cm	
		Supply	1 – 4 g·cm	
7	Flywheel thrust gap		0.05 – 0.5 mm	
8	Button operation force	Play button	1.1 kg or less	
		FF button	0.8 kg or less	
		Rewind button	1.1 kg or less	
		Eject button	0.6 kg or less	
		Record button	1.0 kg or less	
		Pause button	1.0 kg or less	

Point	Poste de vérification		Valeur de référence	Remarques
1	Pression du galet-presseur		300 – 500 g	Remarque
2	Couple d'enroulage		30 – 60 g·cm	
3	Couple d'avancée rapide/rembobinage rapide		50 g·cm ou plus	
4	Effort à l'utilisation du détecteur pour arrêt automatique		40 – 75 g	
5	Couple de freinage		15 g·cm ou plus	Mesuré en mode d'arrêt
6	Couple de tension de recul	Enroulage	1 – 6 g·cm	
		Alimentation	1 – 4 g·cm	
7	Intervalle de poussée du volant		0,05 – 0,5 mm	
8	Effort à l'utilisation des touches	Touche de reproduction	1,1 kg ou moins	
		Touche d'avancée rapide	0,8 kg ou moins	
		Touche de rembobinage	1,1 kg ou moins	
		Touche d'éjection	0,6 kg ou moins	
		Touche d'enregistrement	1,0 kg ou moins	
		Touche de pause	1,0 kg ou moins	

Note:
Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

Remarque:
Placez cet appareil en mode de reproduction, appuyez sur le galet-presseur dans le sens de la flèche à l'aide d'un calibre de tension type éventail, et mesurez la pression lorsque le galet-presseur est libéré du cabestan.



LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point.
Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use.
Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (# 1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

LUBRIFICATION

Lubrifiez d'une ou deux gouttes d'huile au point de rotation ou lubrifiez de graisse le point de glissement.
Lubrifiez les pièces respectives énumérées toutes les 1000 heures ou une fois par an lors d'un usage normal de l'appareil.
Evitez une lubrification excessive, car le mouvement rotatif serait perturbé par les éclaboussures d'huile.

Point de lubrification		Huile ou graisse
Section rotative	Métal et métal	Huile de moteur PAN (10W-40)
	Métal et moulé	Huile de curseur sonic (# 1600)
Section glissante	Métal et métal	Hitasol (MO-138)
	Moulé et moulé Moulé et métal	Graisse blanche (FL-LUBE-A)
Prévention de résonance du ressort		Floil (GB-TS-1)

MAINTENANCE

■ **Clean cabinet and panels when dirty**
Clean off dirt on the surfaces with a dry cltoh. Never use thinners, benzene or alcohol since these will damage the surface finish.

ENTRETIEN

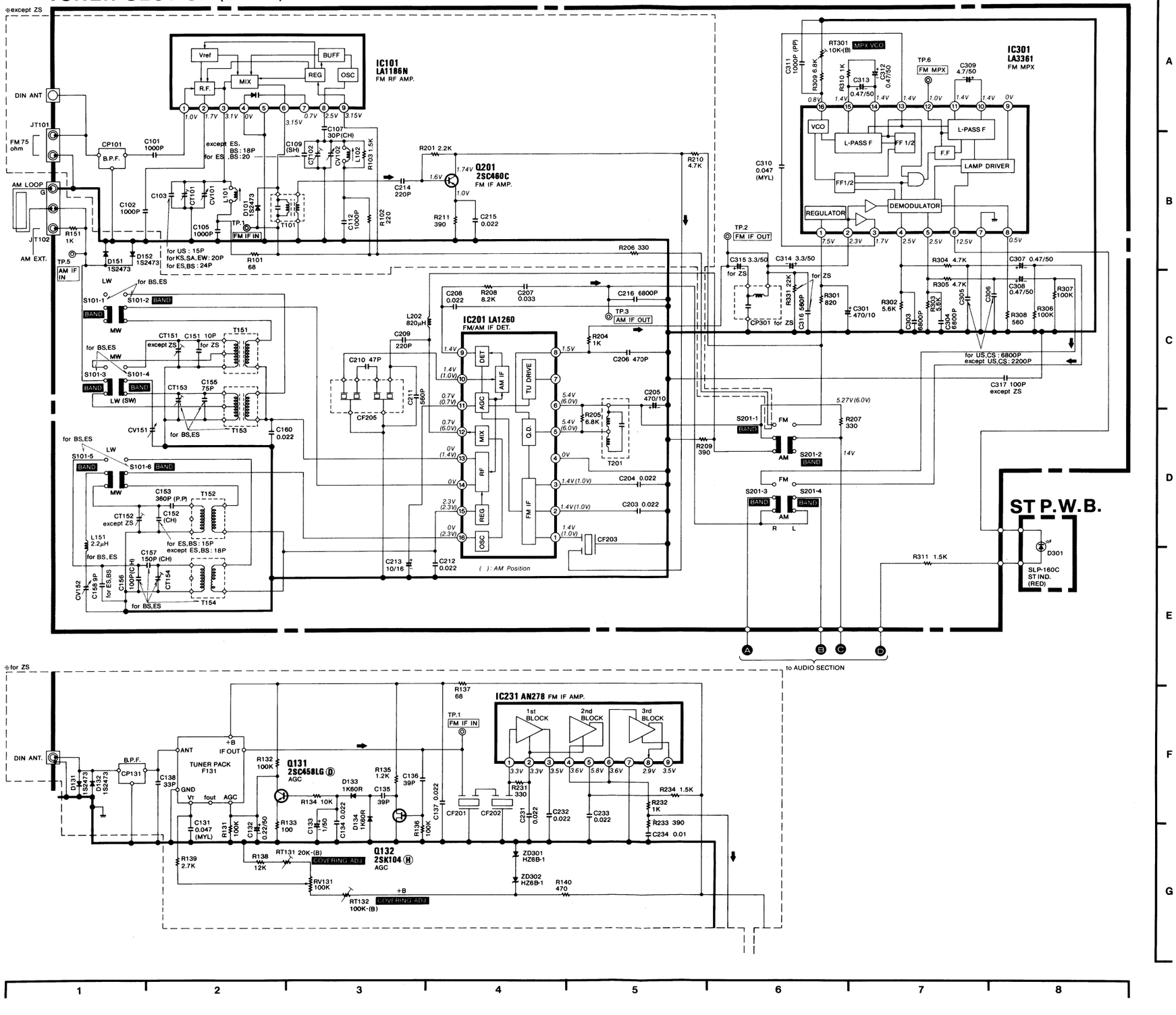
■ **Nettoyage du coffret et de panneaux lorsqu'ils sont sales**
Enlever la poussière des surfaces de l'appareil avec un chiffon sec. Ne jamais utiliser de solvants, de benzine ou d'alcool car ils abîmeralent le fini des surfaces.

CIRCUIT DIAGRAM • DIAGRAMME DES CIRCUITS

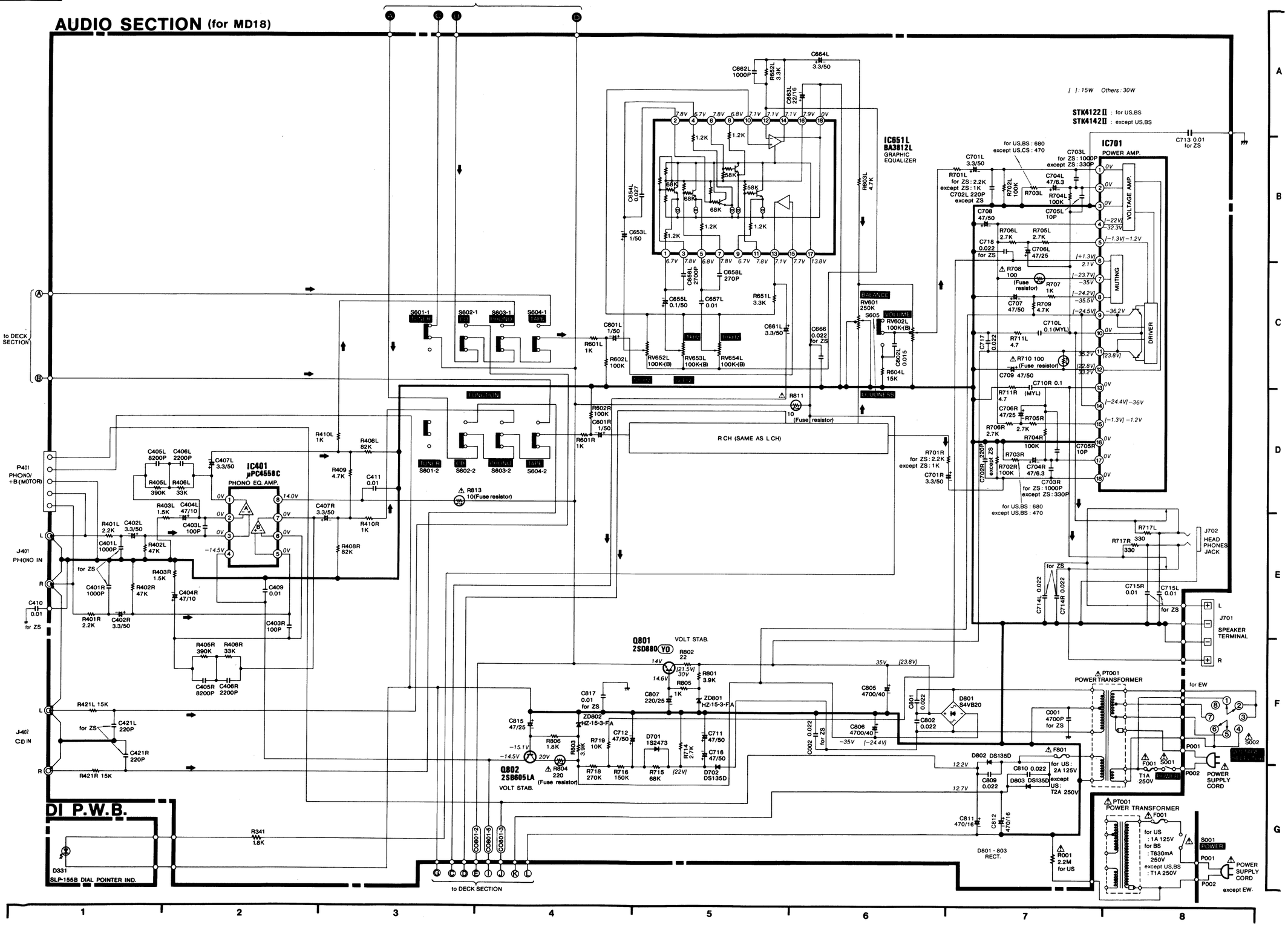
CAUTION
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mmϕ.

ATTENTION
Utilisez les condensateurs électrolytiques à soupape hermétique lorsque le diamètre de ces derniers est supérieur à 10 mmϕ.
✻ : Axial lead cylindrical ceramic capacitor ✻ : Condensateur céramique cylindrique à conducteur axial

TUNER SECTION (for MD18)



AUDIO SECTION (for MD18)



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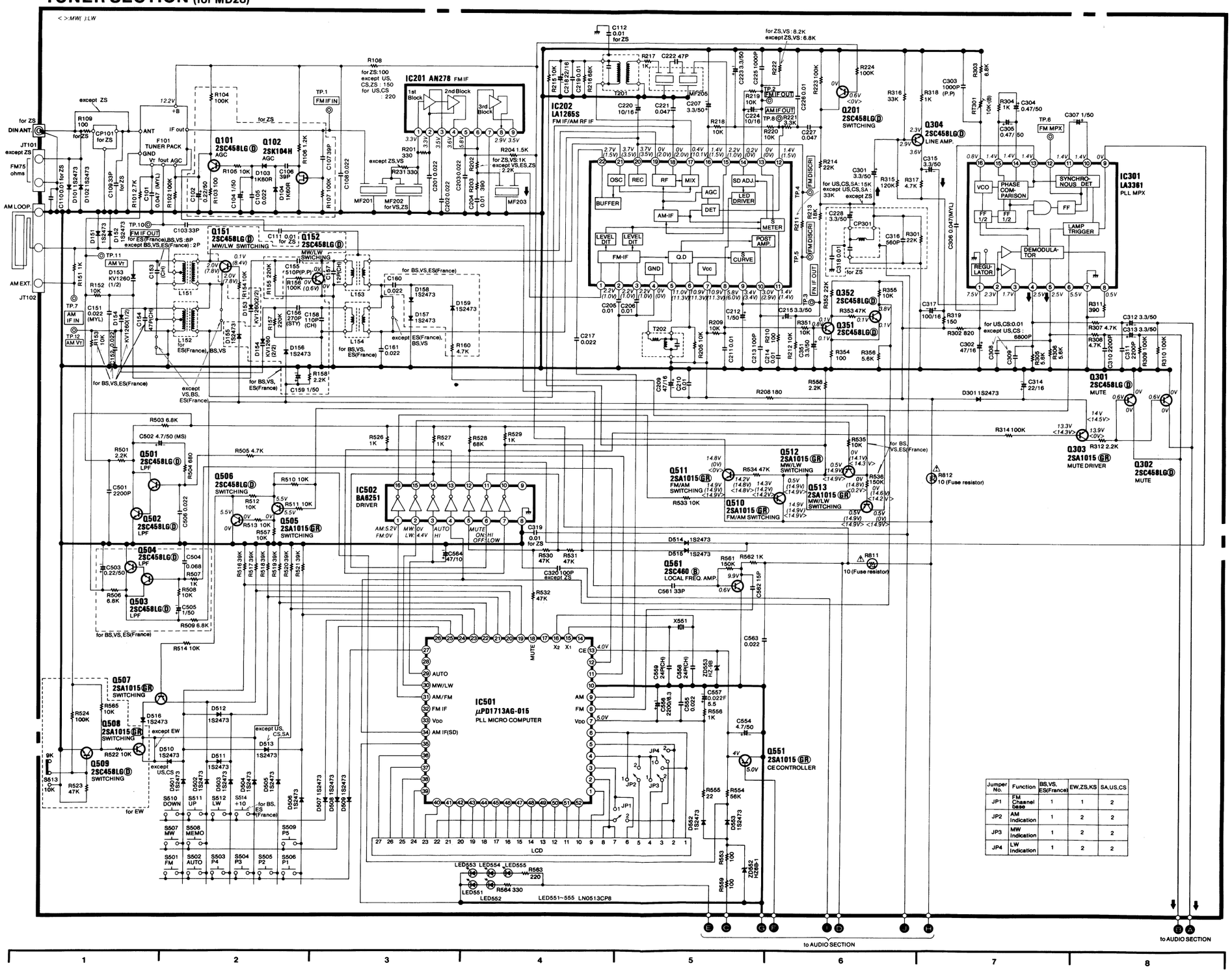
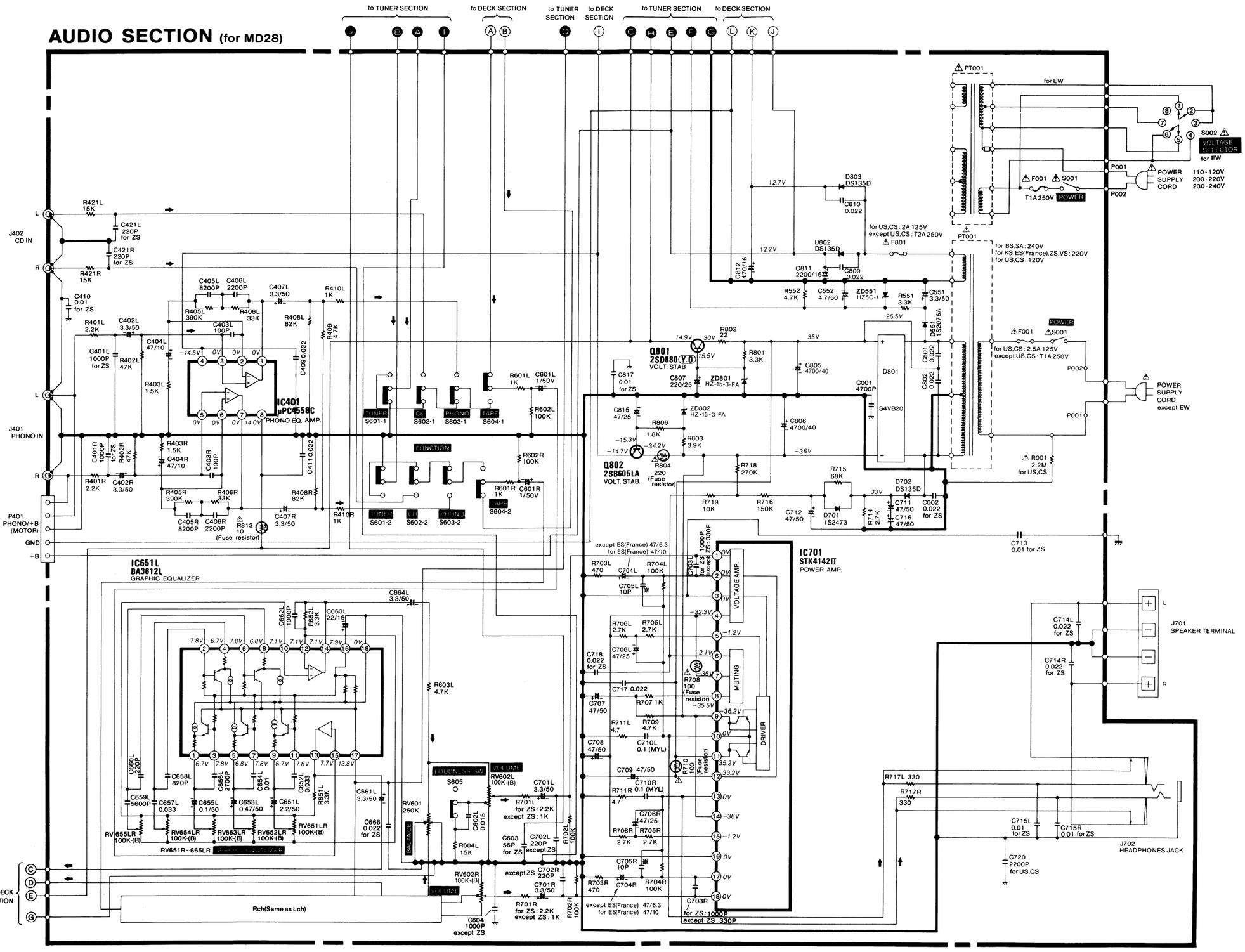
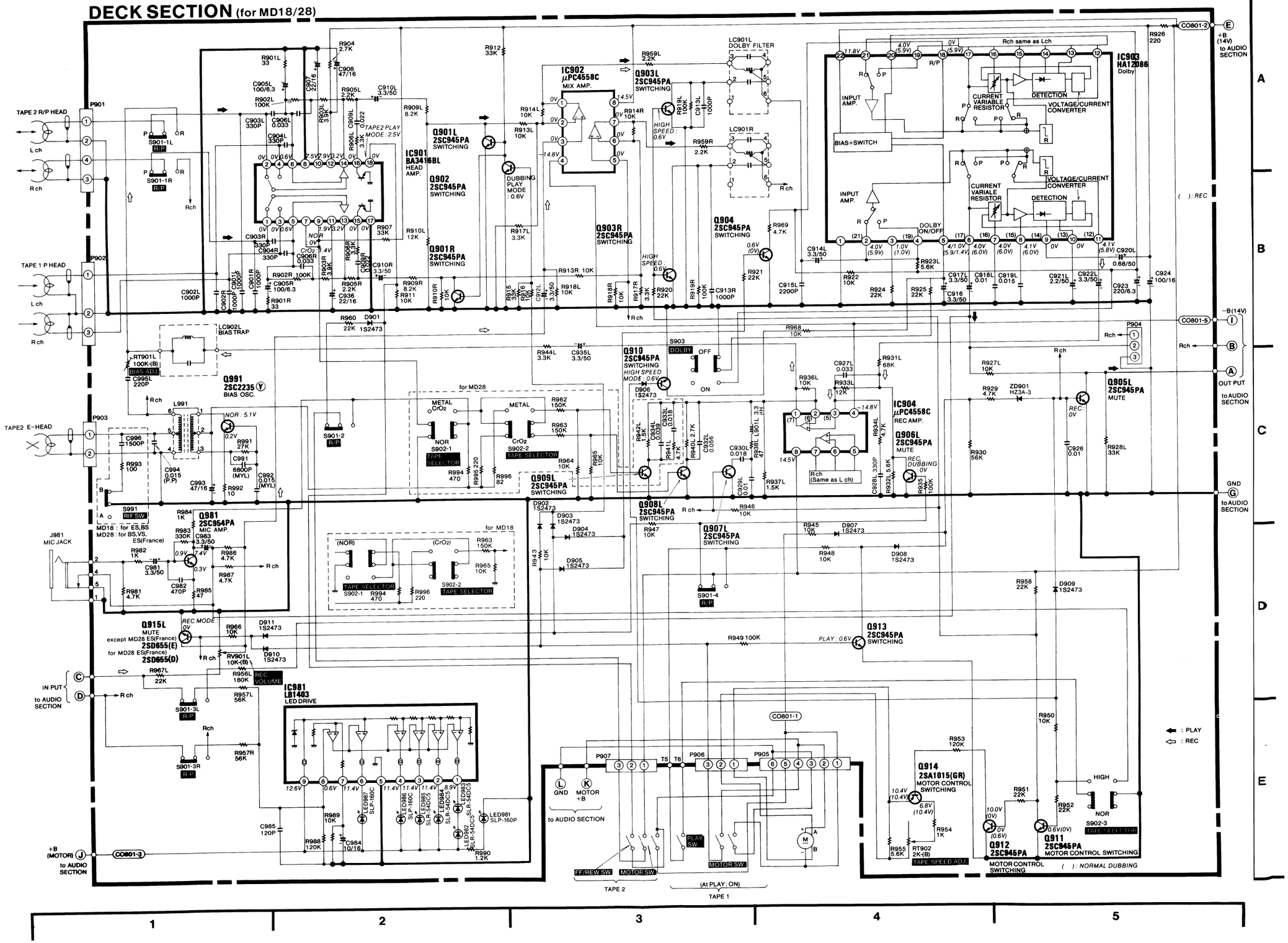

IC201 AN278 FM IF
IC202 LA1265S FM IF/AM RF IF
IC301 LA3361 PLL MPX
IC501 μPD1713AG-015 PLL MICRO COMPUTER
IC502 BA6251 DRIVER
Q101 2SC458LG(D) AGC
Q102 2SK104H AGC
Q151 2SC458LG(D) MW/LW SWITCHING
Q152 2SC458LG(D) MW/LW SWITCHING
Q201 2SC458LG(D) SWITCHING
Q304 2SC458LG(D) LINE AMP.
Q352 2SC458LG(D)
Q351 2SC458LG(D)
Q301 2SC458LG(D) MUTE
Q302 2SC458LG(D) MUTE
Q303 2SA1015(GR) MUTE DRIVER
Q501 2SC458LG(D) LPF
Q502 2SC458LG(D) LPF
Q503 2SC458LG(D) LPF
Q504 2SC458LG(D) LPF
Q505 2SA1015(GR) SWITCHING
Q506 2SC458LG(D) SWITCHING
Q507 2SA1015(GR) SWITCHING
Q508 2SA1015(GR) SWITCHING
Q509 2SC458LG(D) SWITCHING
Q510 2SA1015(GR) FM/AM SWITCHING
Q511 2SA1015(GR) FM/AM SWITCHING
Q512 2SA1015(GR) MW/LW SWITCHING
Q513 2SA1015(GR) MW/LW SWITCHING
Q551 2SA1015(GR) CE CONTROLLER
Q561 2SC460(B) LOCAL FREQ. AMP.
F101 TUNER PACK
OSC
REC
RF
MIX
AGC
DET
SD ADJ
LED DRIVER
BUFFER
AM-IF
S METER
POST AMP.
FM-IF
Q.D
S CURVE
GND
Vcc
VCO
PHASE COM-PARISON
SYNCHRO-NOUS DET
FF
LAMP TRIGGER
DEMODULA-TOR
REGU-LATOR
LCD
MUTE
AUTO
MW/LW
AM/FM
FM IF
AM IF(SD)
AM
FM
CE
X1
X2
to AUDIO SECTION
to AUDIO SECTION
for ZS
except ZS
for BS,VS,ES(France)
except VS,BS, ES(France)
except ES(France), BS,VS
except US,CS,SA
except EW
except US,CS
for EW
for US,CS:0.01 except US,CS : 6800P
for ZS,VS : 8.2K except ZS,VS : 6.8K
for US,CS,SA : 15K except US,CS,SA : 33K except ZS
for ES(France),BS,VS :8P except BS,VS,ES(France) : 2P
for ZS:100 except US, CS,ZS : 150 for US,CS : 220
for ZS,VS:1K except VS,ES,ZS 2.2K
MW/LW SWITCHING
FM IF IN
FM IF OUT
AM IF OUT
FM MPX
DIN ANT.
JT101
JT102
AM LOOP
AM EXT.
FM75 ohms
TP.1
TP.2
TP.3
TP.4
TP.5
TP.6
TP.7
TP.10
TP.11
TP.12
AM IF IN
AM VT
R108 R201 R204 R231 R214 R315 R317 R316 R318 R303 R304 R307 R308 R309 R310 R311 R312 R319 R354 R356 R358 R355 R352 R353 R351 R209 R205 R208 R210 R212 R211 R213 R217 R218 R219 R220 R221 R222 R223 R224 R301 R302 R303 R305 R306 R313 R314 R501 R503 R504 R505 R506 R507 R508 R509 R510 R511 R512 R513 R514 R522 R523 R524 R526 R527 R528 R529 R530 R531 R532 R533 R534 R535 R536 R537 R538 R551 R552 R553 R554 R555 R556 R557 R558 R559 R561 R562 R563 R564 R565 R812 R811
C112 C201 C202 C203 C204 C205 C206 C207 C208 C209 C210 C211 C212 C213 C214 C215 C217 C220 C221 C222 C223 C224 C225 C226 C227 C228 C301 C302 C303 C304 C305 C306 C307 C308 C309 C310 C311 C312 C313 C314 C315 C316 C317 C318 C319 C320 C351 C352 C501 C502 C503 C504 C505 C506 C507 C508 C509 C510 C511 C512 C513 C514 C515 C516 C517 C518 C519 C520 C521 C522 C523 C524 C525 C526 C527 C528 C529 C530 C531 C532 C533 C534 C535 C536 C537 C538 C539 C540 C541 C542 C543 C544 C545 C546 C547 C548 C549 C550 C551 C552 C553 C554 C555 C556 C557 C558 C559 C560 C561 C562 C563 C564
D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 D117 D118 D119 D120 D121 D122 D123 D124 D125 D126 D127 D128 D129 D130 D131 D132 D133 D134 D135 D136 D137 D138 D139 D140

AUDIO SECTION (for MD28)

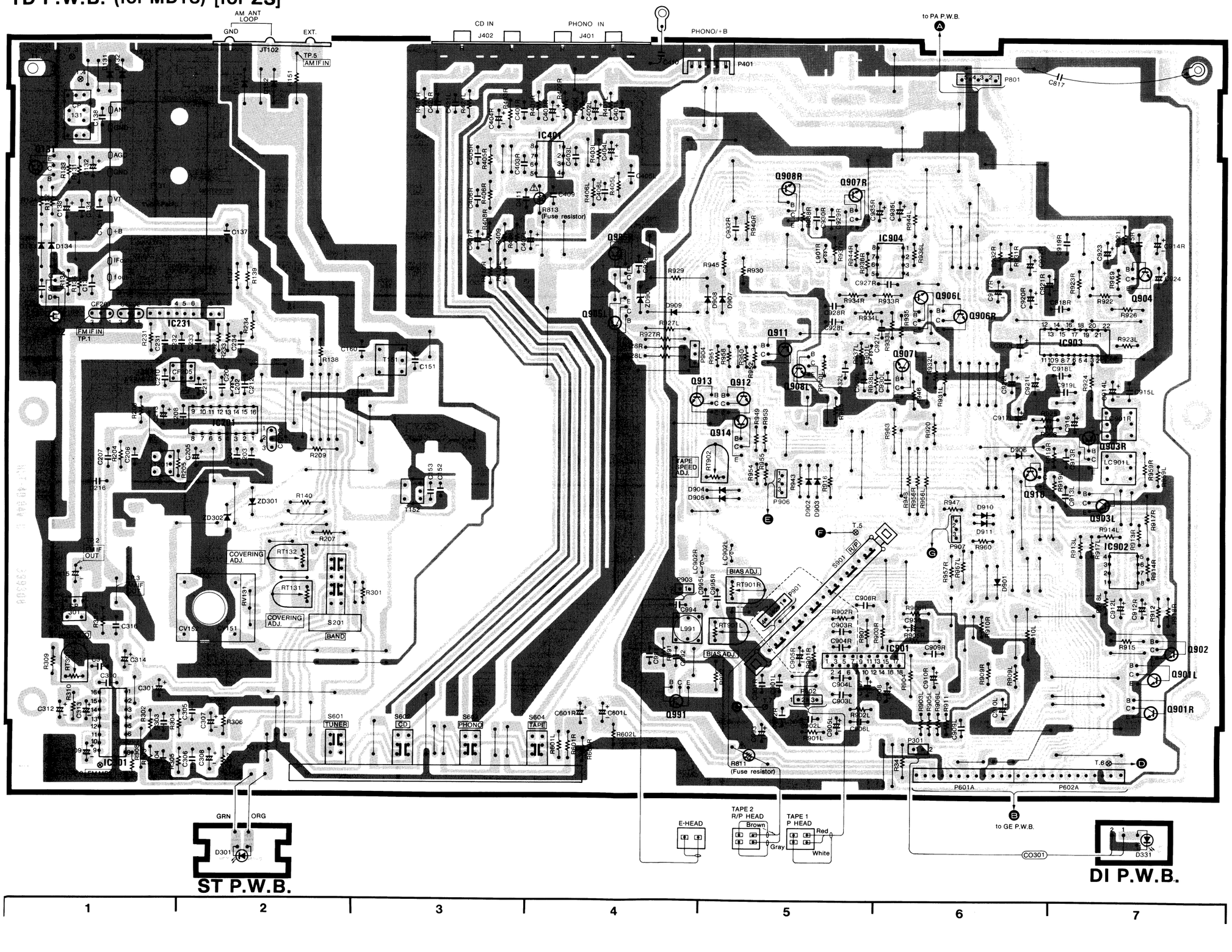


DECK SECTION (for MD18/28)

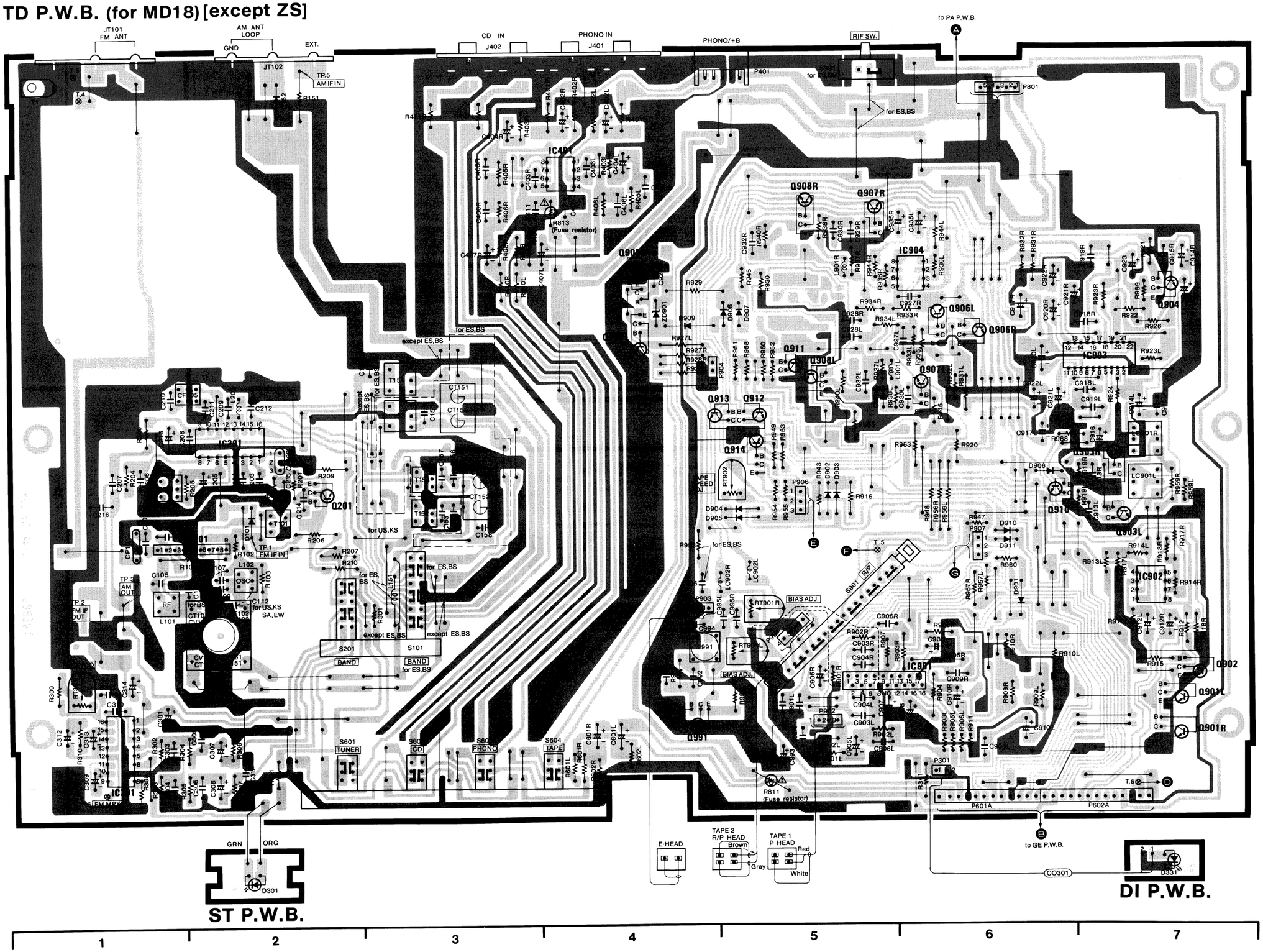


PRINTED WIRING BOARD • PLAN DE BASE

TD P.W.B. (for MD18) [for ZS]



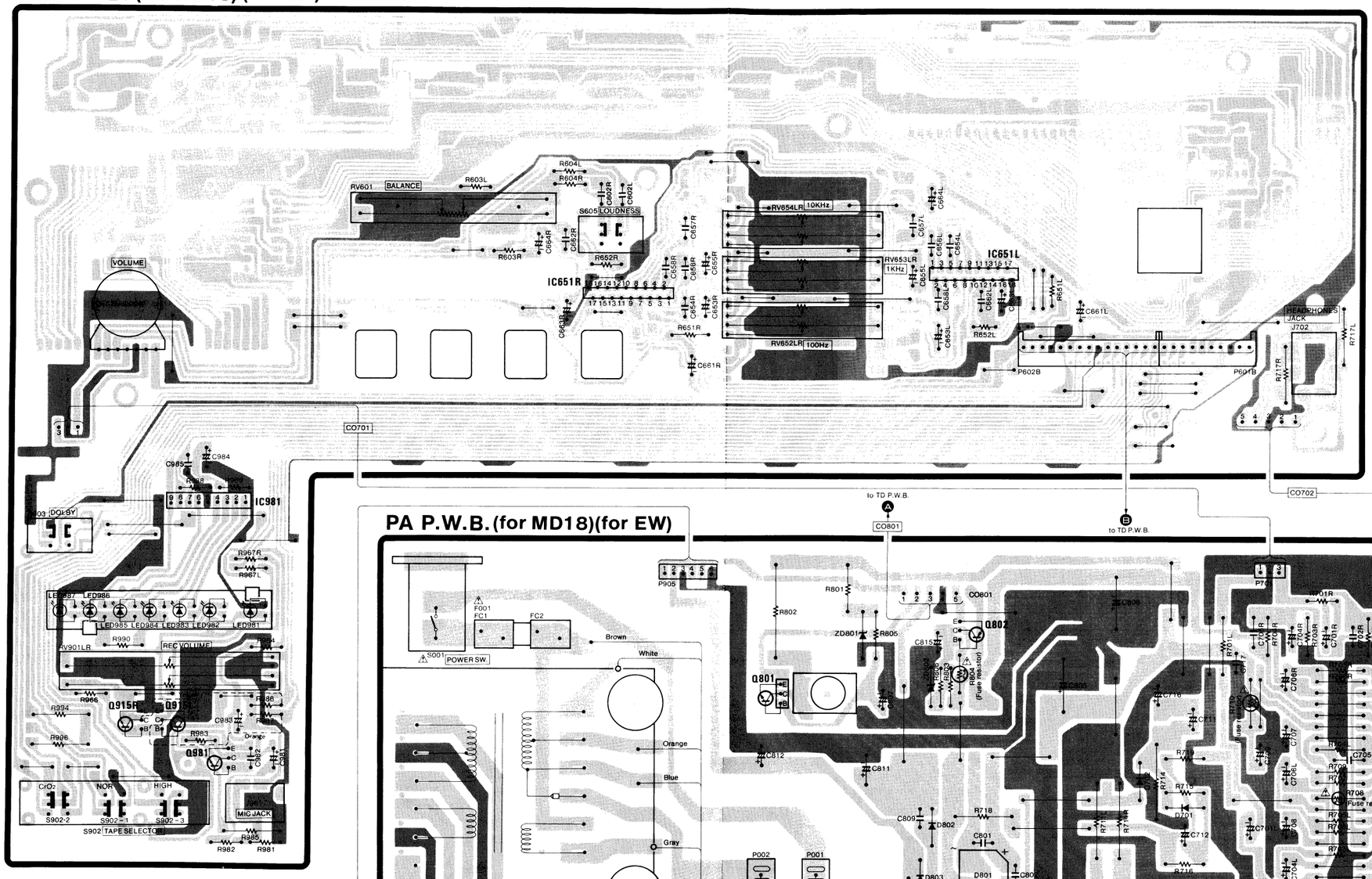
TD P.W.B. (for MD18) [except ZS]



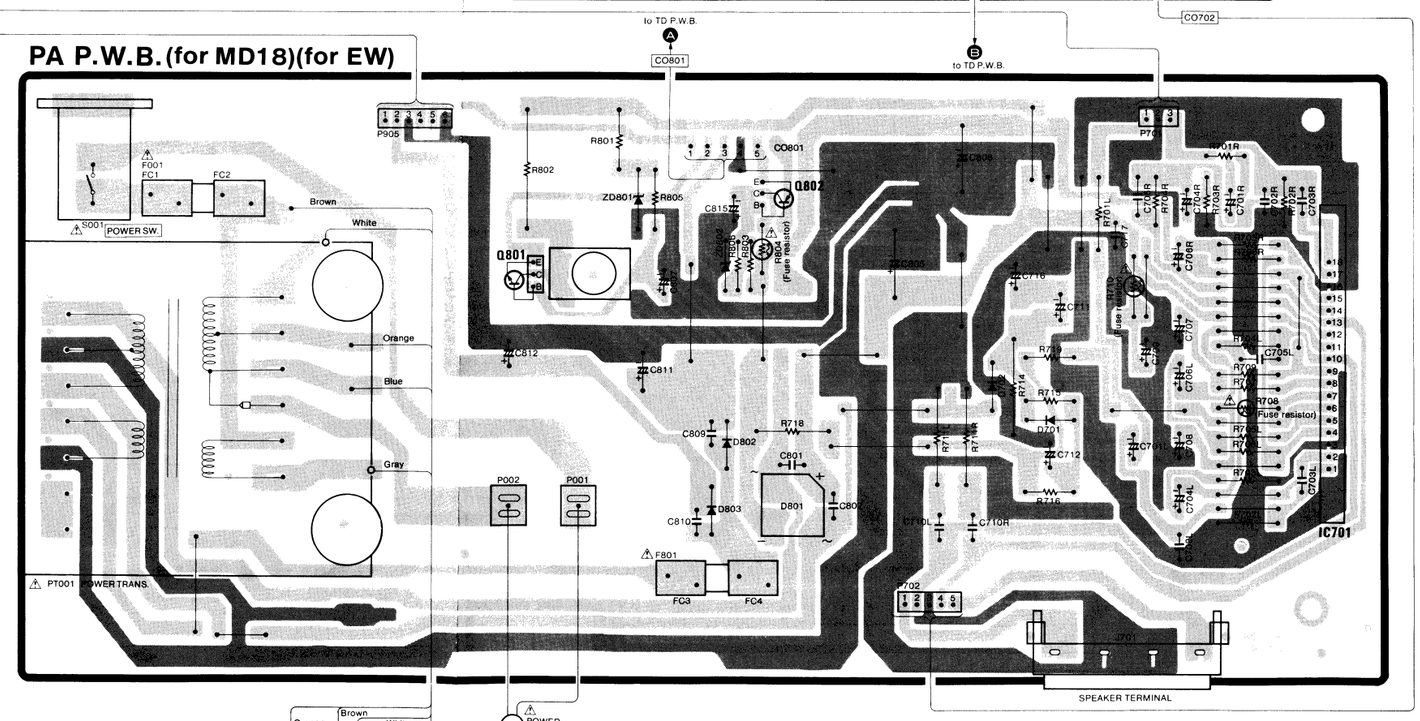
A B C D E

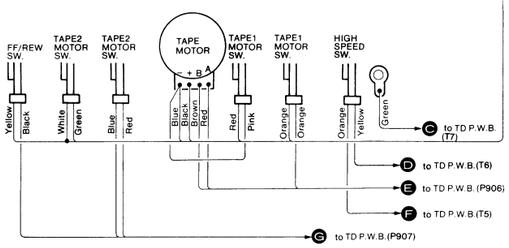
1 2 3 4 5 6 7

GE P.W.B. (for MD18) (for EW)

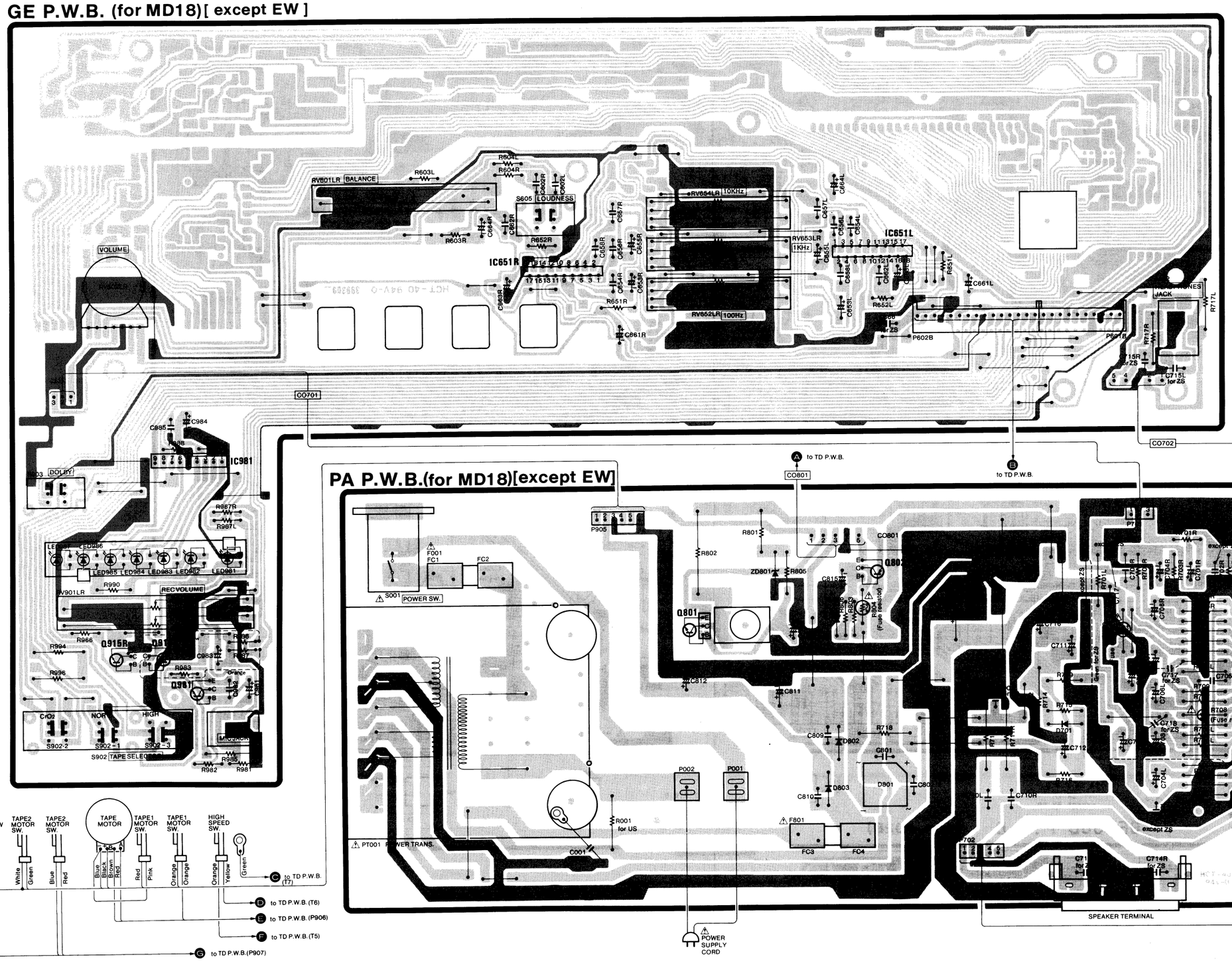


PA P.W.B. (for MD18)(for EW)





GE P.W.B. (for MD18)[except EW]



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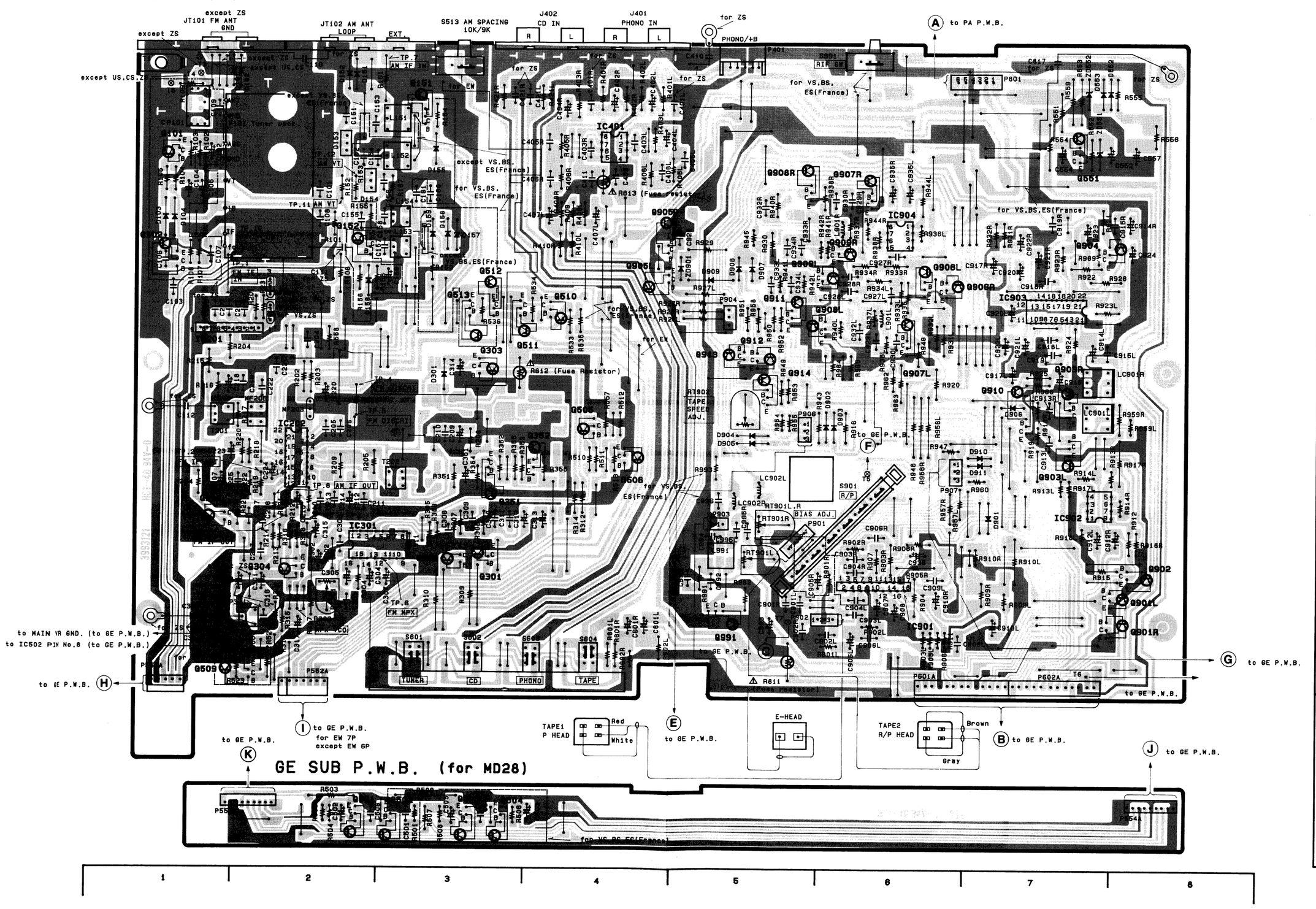

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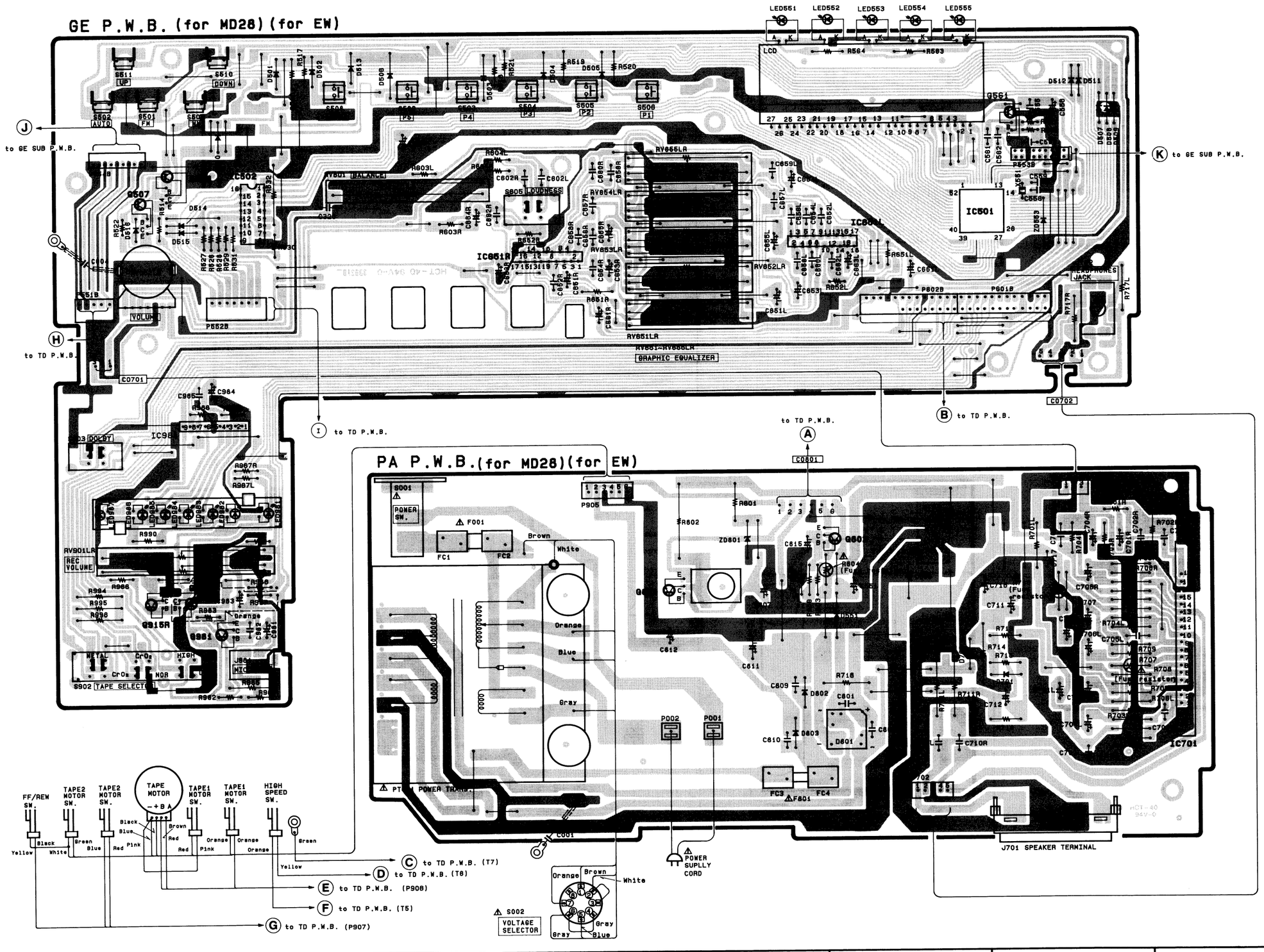
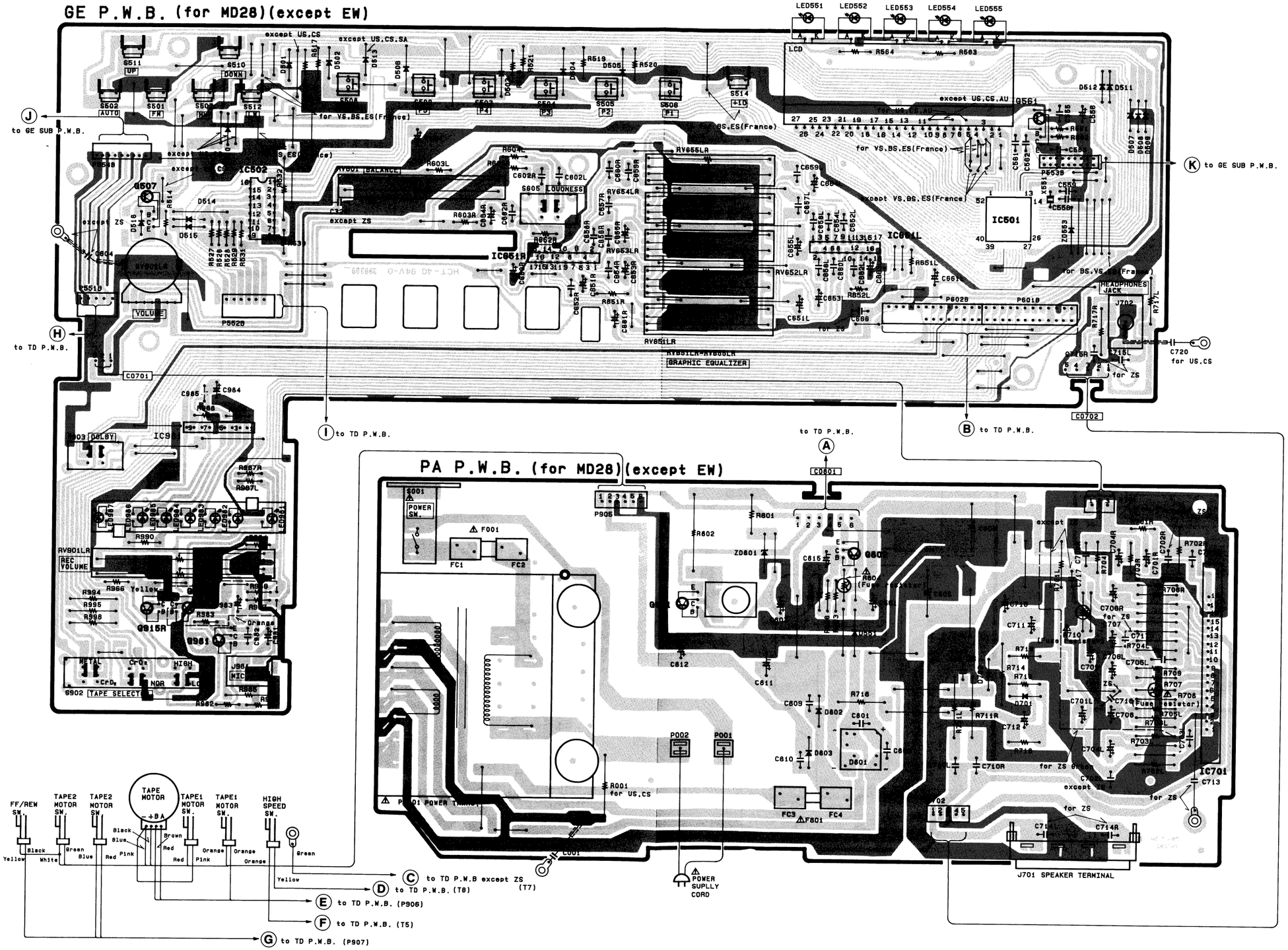


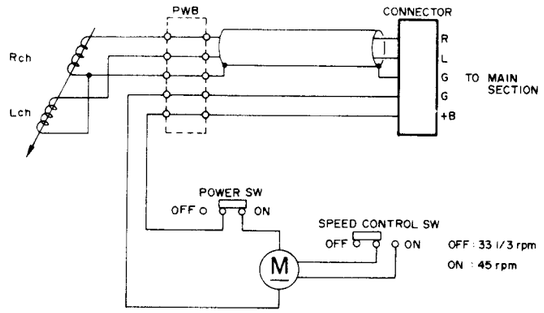
GE P.W.B. (for MD28)(except EW)



PA P.W.B. (for MD28)(except EW)

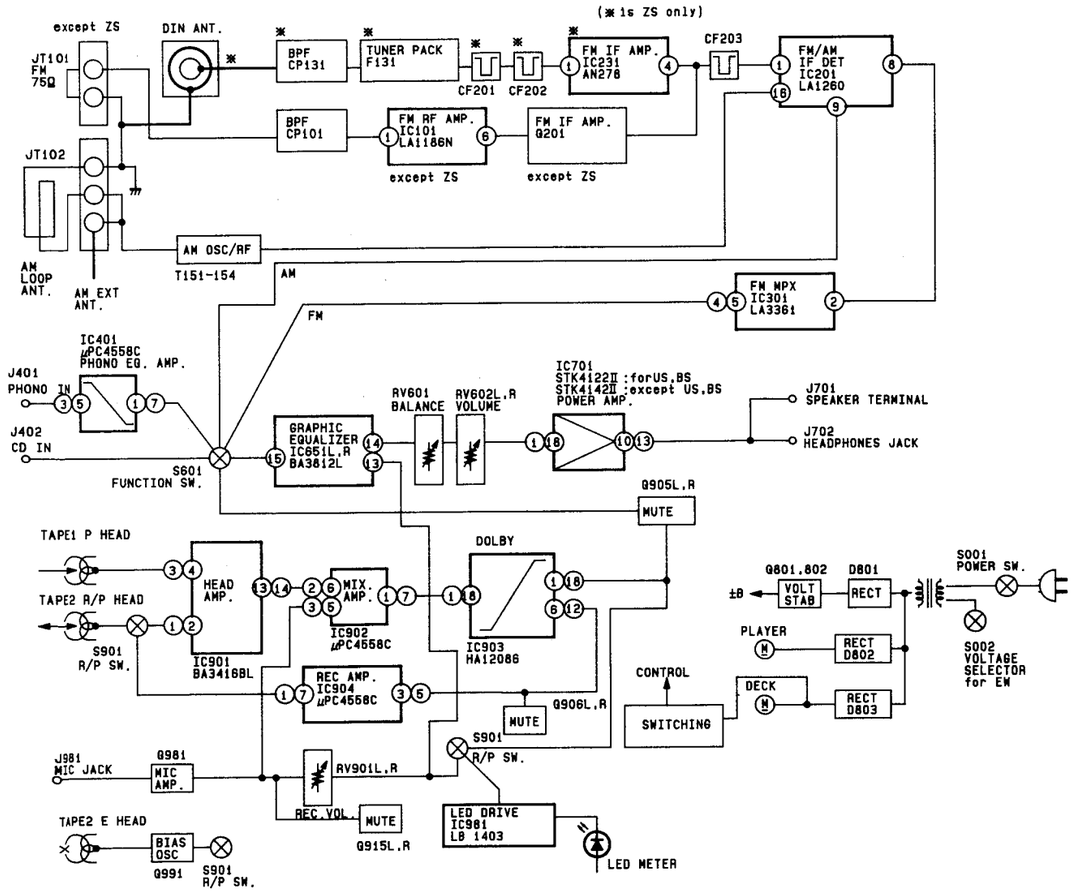
CIRCUIT DIAGRAM • DIAGRAMME DES CIRCUITS

HT-MD28

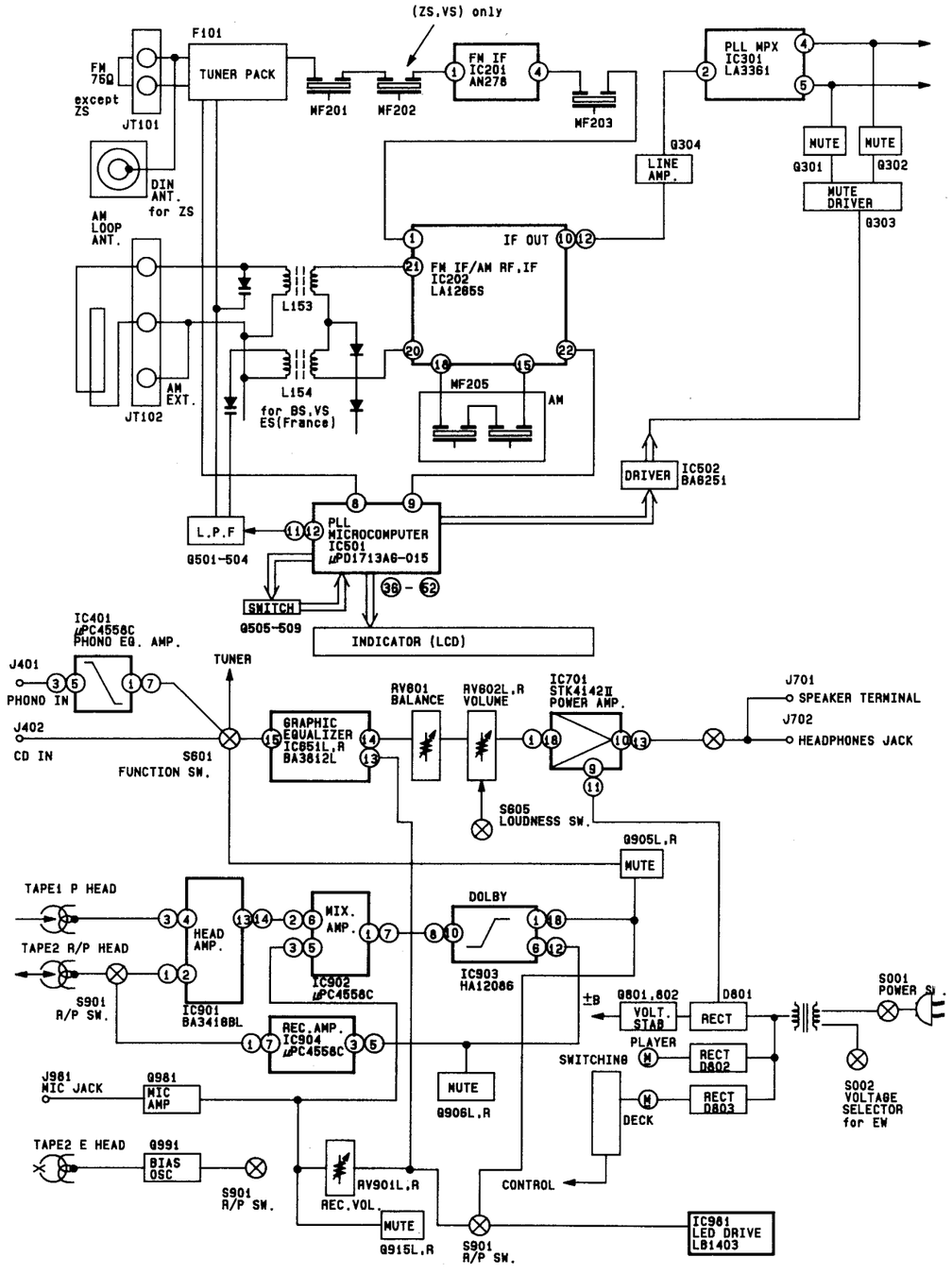


BLOCK DIAGRAM • DIAGRAMME SYNOPTIQUE

HRD-MD18

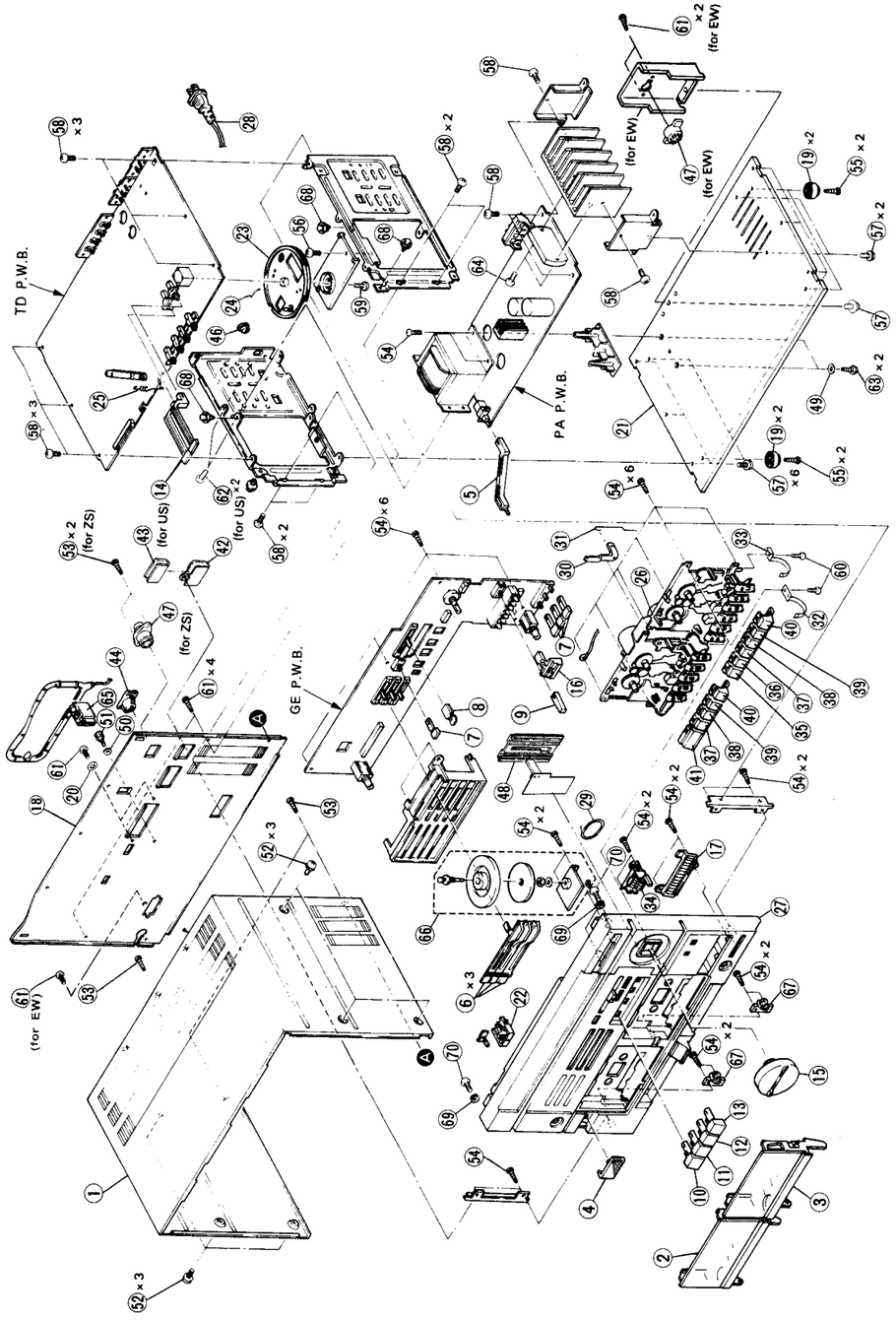


HRD-MD28

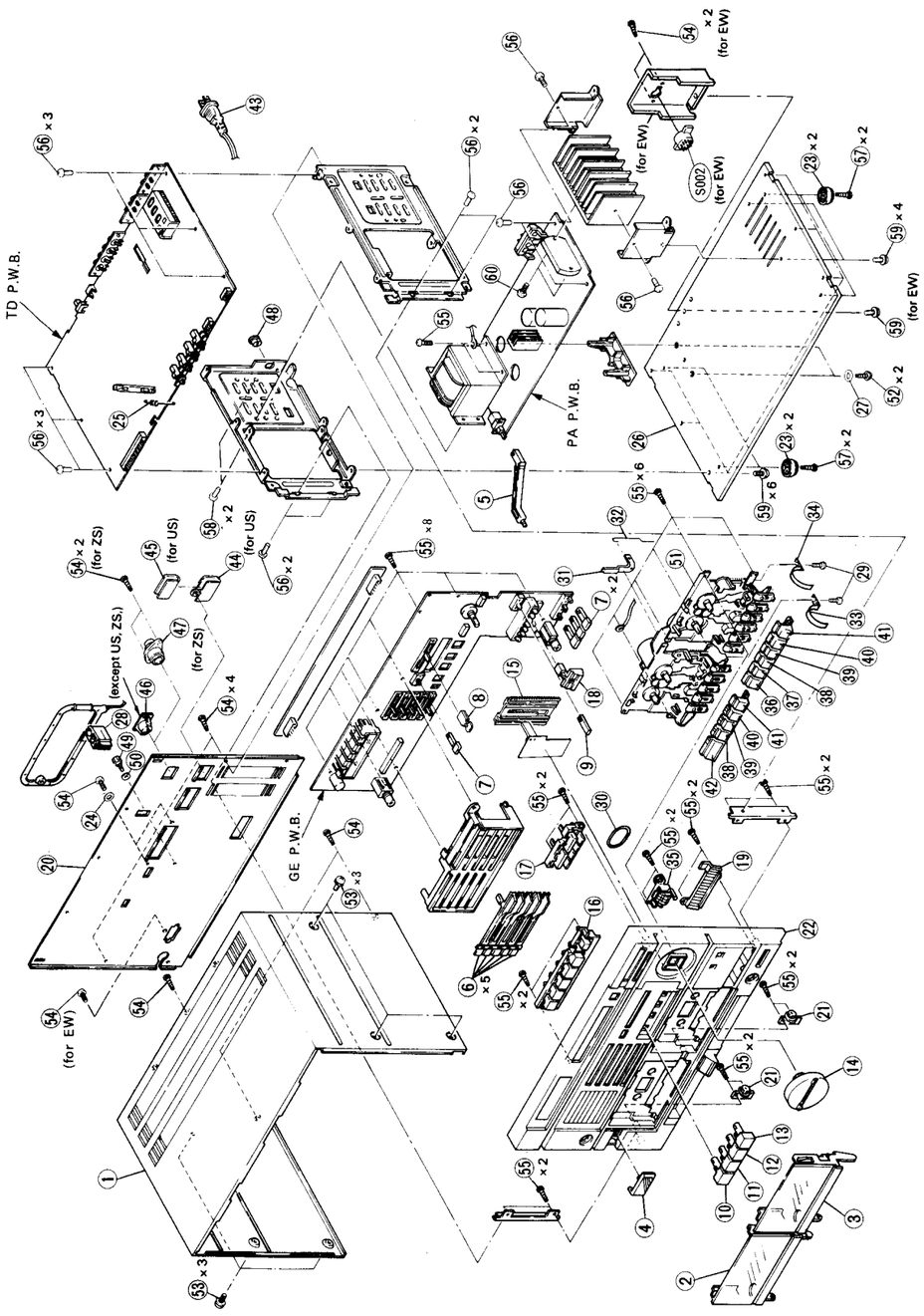


EXPLODED VIEW • VUE ECLATEE

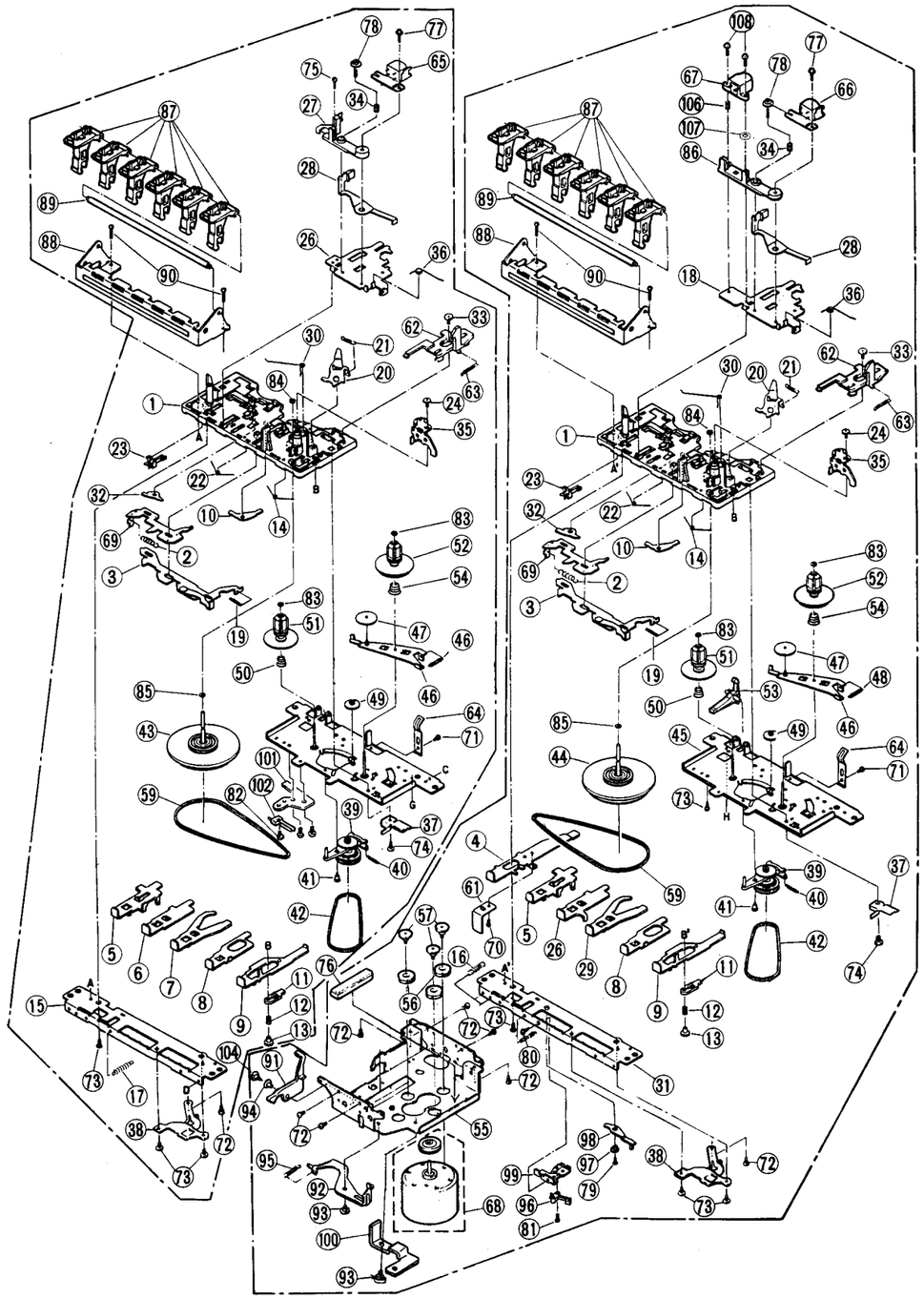
HRD-MD18



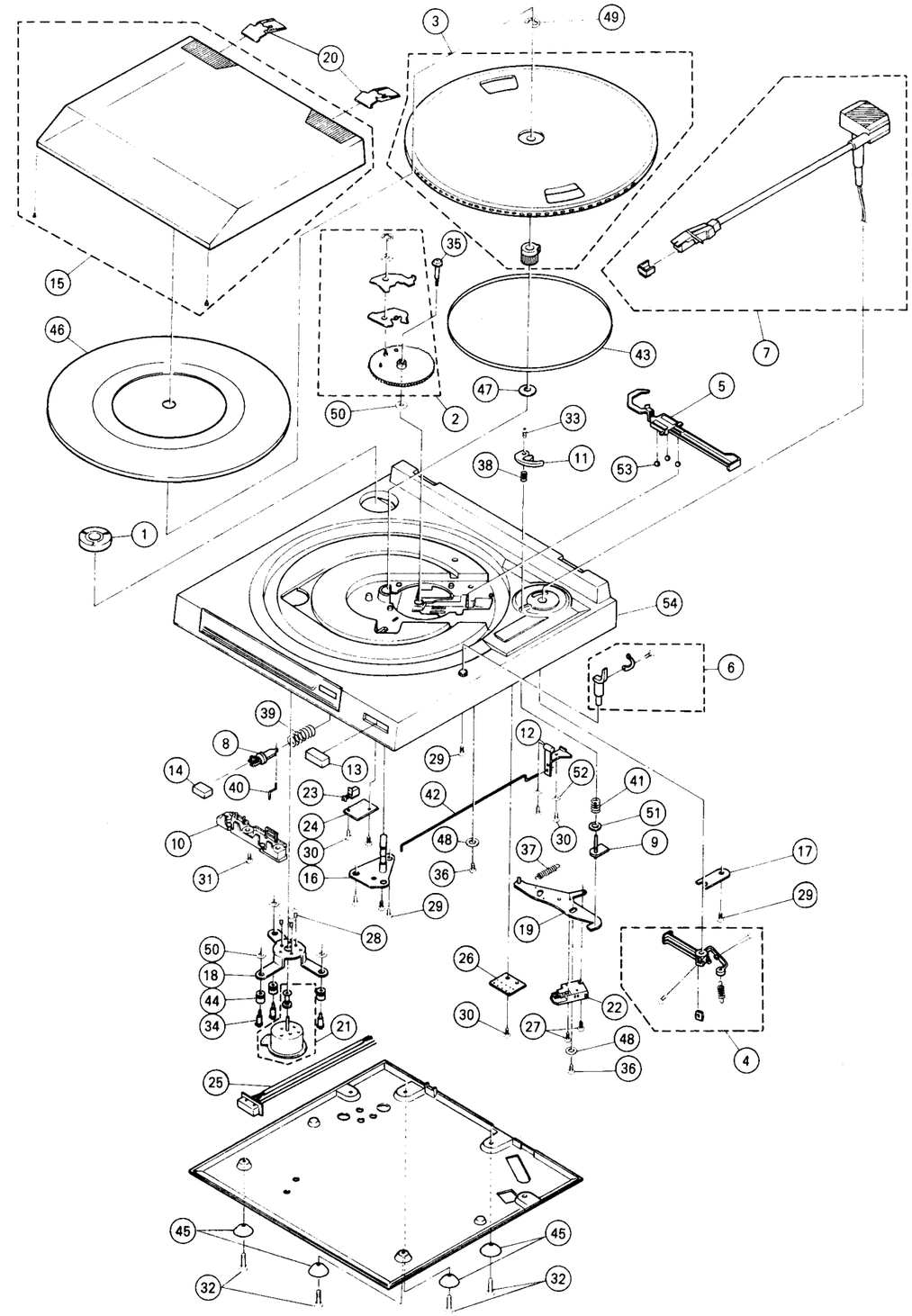
HRD-MD28



■ Cassette chassis



HT-MD28



REPLACEMENT PARTS LIST

CD.....Ceramic discal EL..... Electrolytic ST..... Styrol ME ..... Metal CO..... Composition
CC..... Cylindrical ceramic MF ..... Mylar, film CF ..... Carbon film MO..... Metal, oxide FR ..... Fuse resistor

HRD-MD18

SYMBOL NO.	PART NO.	DESCRIPTION
		CAPACITORS
C001	0244109	CD 4700pF ±10% 50V [for ZS]
C002	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C101	0209731	CD 1000pF ±10% 50V [except ZS]
C102	0209731	CD 1000pF ±10% 50V [except ZS]
C103	0248664	CD 15pF ±5% 50V [for US]
	0248667	CD 20pF ±5% 50V [for EW, SA, KS]
	0248669	CD 24pF ±5% 50V [for ES, BS]
C105	0209731	CD 1000pF ±10% 50V [except ZS]
C107	0246451	CD 30pF ±5% 50V [except ZS]
C109	0248176	CD 18pF ±5% 50V [for BS, ES, ZS]
	0248177	CD 20pF ±5% 50V [for BS, ES]
C112	0244101	CD 1000pF ±10% 50V [except ZS]
C131	0275015	MF 0.047μF ±10% 50V [for ZS]
C132	0252802	EL 0.22μF 50V [for ZS]
C133	0252811	EL 1μF 50V [for ZS]
C134	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C135	0208674	CD 39pF ±5% 50V [for ZS]
C136	0208674	CD 39pF ±5% 50V [for ZS]
C137	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C138	0248672	CD 33pF ±5% 50V [for ZS]
C151	0208650	CD 10pF ±0.5pF 50V [for ZS]
C152	0246446	CD 18pF ±5% 50V [except BS, ES]
C152	0246444	CD 15pF ±5% 50V [for ES, BS]
C153	0268321	PP 360pF ±5% 100V
C155	0208681	CD 75pF ±5% 50V [for ES, BS]
C156	0246464	CD 100pF ±5% 50V [for ES, BS]
C157	0246468	CD 150pF ±5% 50V [for ES, BS]
C158	0246429	CD 9pF ±0.25pF 50V [for ES, BS]
C160	0244173	CD 0.022μF +80% −20% 50V
C203	0244173	CD 0.022μF +80% −20% 50V
C204	0244173	CD 0.022μF +80% −20% 50V
C205	0252335	EL 470μF 10V
C206	0208524	CD 470pF ±5% 50V
C207	0240218	CD 0.033μF ±10% 25V
C208	0244173	CD 0.022μF +80% −20% 50V
C209	0208692	CD 220pF ±5% 50V
C210	0208676	CD 47pF ±5% 50V
C211	0208526	CD 560pF ±5% 50V
C212	0244173	CD 0.022μF +80% −20% 50V
C213	0252521	EL 10μF 16V
C214	0208692	CD 220pF ±5% 50V [except ZS]
C215	0244173	CD 0.022μF +80% −20% 50V [except ZS]
C216	0209736	CD 6800pF ±10% 50V
C231	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C232	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C233	0244173	CD 0.022μF +80% −20% 50V [for ZS]
C234	0244171	CD 0.01μF +80% −20% 50V [for ZS]
C301	0252335	EL 470μF 10V
C303	0240210	CD 6800pF ±10% 25V
C304	0240210	CD 6800pF ±10% 25V
C305	0209733	CD 2200pF ±10% 50V [except US]
C305	0209736	CD 6800pF ±10% 50V [for US]
C306	0209733	CD 2200pF ±10% 50V [except US]
C306	0209736	CD 6800pF ±10% 50V [for US]
C307	0252805	EL 0.47μF 50V
C308	0252805	EL 0.47μF 50V
C309	0252815	EL 4.7μF 50V
C310	0275015	MF 0.047μF ±10% 50V
C311	0268446	PP 0.001μF ±5% 100V
C312	0252805	EL 0.47μF 50V
C313	0252805	EL 0.47μF 50V
C314	0252813	EL 3.3μF 50V
C315	0252813	EL 3.3μF 50V [for ZS]
C316	0208526	CD 560pF ±5% 50V [for ZS]
C317	0208684	CD 100pF ±5% 50V [except ZS]
C401L,R	0209731	CD 1000pF ±10% 50V [for ZS]
C402L,R	0252813	EL 3.3μF 50V
C403L,R	0208684	CD 100pF ±5% 50V
C404L,R	0252325	EL 47μF 10V
C405L,R	0240211	CD 8200pF ±10% 25V
C406L,R	0240204	CD 2200pF ±10% 25V
C407L,R	0252813	EL 3.3μF 50V
C409	0244171	CD 0.01μF +80% −20% 50V
C410	0244171	CD 0.01μF +80% −20% 50V [for ZS]
C411	0244171	CD 0.01μF +80% −20% 50V
C421L,R	0208692	CD 220pF ±5% 50V [for ZS]
C601L,R	0252811	EL 1μF 50V
C602L,R	0240214	CD 0.015μF ±10% 25V
C653L,R	0252811	EL 1μF 50V
C654L,R	0240217	CD 0.027μF ±10% 25V
C655L,R	0252801	EL 0.1μF 50V
C656L,R	0240205	CD 2700pF ±10% 25V
C657L,R	0244171	CD 0.01μF +80% −20% 50V
C658L,R	0208694	CD 270pF ±5% 50V
C661L,R	0252813	EL 3.3μF 50V
C662L,R	0209731	CD 1000pF ±10% 50V
C663L,R	0252522	EL 22μF 16V
C664L,R	0252813	EL 3.3μF 50V
C666	0244173	EL 0.022μF 16V [for ZS]
C701L,R	0252813	EL 3.3μF 50V
C702L,R	0208692	CD 220pF ±5% 50V [except ZS]
C703L,R	0208696	CD 330pF ±5% 50V [except ZS]
C703L,R	0209731	CD 1000pF ±10% 50V [for ZS]
C704L,R	0252225	EL 47μF 6.3V
C705L,R	0230612	CC 10pF ±5% 50V
C706L,R	0252625	EL 47μF 25V
C707	0252825	EL 47μF 50V
C708	0252825	EL 47μF 50V
C709	0252825	EL 47μF 50V
C710L,R	0276011	MF 0.1μF ±10% 50V
C711	0255011	EL 47μF 50V
C712	0255011	EL 47μF 50V
C713	0244171	CD 0.01μF 50V [for ZS]
C714L,R	0244173	CD 0.022μF 50V [for ZS]
C715L,R	0244171	CD 0.01μF 50V [for ZS]
C716	0255011	EL 47μF 50V
C717	0244173	CD 0.022μF 50V
C718	0244173	CD 0.022μF 50V [for ZS]
C801	0244173	CD 0.022μF 50V
C802	0244173	CD 0.022μF 50V
C805	0255001	EL 4700μF 40V
C806	0255001	EL 4700μF 40V
C807	0252632	EL 220μF 25V
C809	0244173	CD 0.022μF 50V
C810	0244173	CD 0.022μF 50V
C811	0252535	EL 470μF 16V
C812	0252535	EL 470μF 16V
C815	0252625	EL 47μF 25V
C817	0244171	CD 0.01μF 50V [for ZS]
C901L,R	0209731	CD 1000pF ±10% 50V
C902L,R	0209731	CD 1000pF ±10% 50V
C903L,R	0248736	CD 330pF ±10% 50V
C904L,R	0248736	CD 330pF ±10% 50V
C905L,R	0252231	EL 100μF 6.3V
C906L,R	0240218	CD 0.033μF ±10% 25V
C907	0252522	EL 22μF 16V
C908	0252525	EL 47μF 16V
C909L,R	0240216	CD 0.022μF ±10% 25V
C910L,R	0252813	EL 3.3μF 50V
C912L,R	0252813	EL 3.3μF 50V
C913L,R	0209731	CD 1000pF ±10% 50V
C914L,R	0252813	EL 3.3μF 50V
C915L,R	0209733	CD 2200pF ±10% 50V
C916	0252813	EL 3.3μF 50V
C917L,R	0252813	EL 3.3μF 50V
C918L,R	0240212	CD 0.01μF ±10% 25V
C919L,R	0240214	CD 0.015μF ±10% 25V
C920L,R	0252807	EL 0.68μF 50V
C921L,R	0252812	EL 2.2μF 50V
C922L,R	0252813	EL 3.3μF 50V
C923	0252232	EL 220μF 6.3V
C924	0252531	EL 100μF 16V
C926	0209737	CD 0.01μF ±10% 50V
C927L,R	0240218	CD 0.033μF ±10% 25V
C928L,R	0209721	CD 339pF ±10% 50V
C929L,R	0240212	CD 0.01μF ±10% 25V
C930L,R	0240215	CD 0.018μF ±10% 25V
C932L,R	0240221	CD 0.056μF ±10% 25V
C935L,R	0252813	EL 3.3μF 50V
C936	0252522	EL 22μF 16V
C981	0252813	EL 3.3μF 50V
C982	0209723	CD 470pF ±10% 50V
C983	0252813	EL 3.3μF 50V
C984	0252521	EL 10μF 16V
C985	0208686	CD 120pF ±10% 50V
C991	0274016	MF 6800pF ±10% 50V
C992,	0275012	MF 0.015μF ±10% 50V
C993	0252525	EL 47μF 16V
C994	0268435	PP 0.015μF ±5% 100V
C995L,R	0208692	CD 220pF ±5% 50V
C996	0209732	CD 1599pF ±10% 50V [for ES, BS]
		RESISTORS
⚠R001	0139008	CO 2200kΩ ±10% RC1/2GF [for US]
R101	0113587	CF 68 ±5% SRD1/6P [except ZS]
R102	0113599	CF 220Ω ±5% SRD1/6P [except ZS]
R103	0113619	CF 1.5kΩ ±5% SRD1/6P [except ZS]
R131	0113663	CF 100kΩ ±5% SRD1/6P [for ZS]
R132	0113663	CF 100kΩ ±5% SRD1/6P [for ZS]
R133	0113591	CF 100Ω ±5% SRD1/6P [for ZS]
R134	0113639	CF 10kΩ ±5% SRD1/6P [for ZS]
R135	0113617	CF 1.2kΩ ±5% SRD1/6P [for ZS]
R136	0113663	CF 100kΩ ±5% SRD1/6P [for ZS]
R137	0129551	CF 68Ω ±5% SRD1/4P [for ZS]
R138	0113641	CF 12kΩ ±5% SRD1/6P [for ZS]
R139	0113625	CF 2.7kΩ ±5% SRD1/6P [for ZS]
R140	0129577	CF 470Ω ±5% SRD1/4P [for ZS]
R151	0113365	CF 1kΩ ±5% SRD1/2P
R201	0113623	CF 2.2kΩ ±5% SRD1/6P [except ZS]
R204	0113615	CF 1kΩ ±5% SRD1/6P
R205	0113635	CF 6.8kΩ ±5% SRD1/6P
R206	0113603	CF 330Ω ±5% SRD1/6P [except ZS]
R207	0113293	CF 330Ω ±5% SRD1/2P
R208	0113637	CF 8.2kΩ ±5% SRD1/6P
R209	0113605	CF 390Ω ±5% SRD1/6P
R210	0113631	CF 4.7kΩ ±5% SRD1/6P [except ZS]
R211	0113605	CF 390Ω ±5% SRD1/6P [except ZS]
R231	0113603	CF 330Ω ±5% SRD1/6P [for ZS]
R232	0113615	CF 1kΩ ±5% SRD1/6P [for ZS]
R233	0113605	CF 390Ω ±5% SRD1/6P [for ZS]
R234	0113619	CF 1.5kΩ ±5% SRD1/6P [for ZS]
R301	0113613	CF 820 ±5% SRD1/6P
R302	0113633	CF 5.6kΩ ±5% SRD1/6P
R303	0113633	CF 5.6kΩ ±5% SRD1/6P
R304	0113631	CF 4.7kΩ ±5% SRD1/6P
R305	0113631	CF 4.7kΩ ±5% SRD1/6P
R306	0113663	CF 100kΩ ±5% SRD1/6P
R307	0113663	CF 100kΩ ±5% SRD1/6P
R308	0113609	CF 560Ω ±5% SRD1/6P
R309	0113635	CF 6.8kΩ ±5% SRD1/6P
R310	0113615	CF 1kΩ ±5% SRD1/6P
R311	0113619	CF 1.5kΩ ±5% SRD1/6P
R331	0113647	CF 22kΩ ±5% SRD1/6P [for ZS]
R341	0113621	CF 1.8kΩ ±5% SRD1/6P
R401L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R402L,R	0113655	CF 47kΩ ±5% SRD1/6P
R403L,R	0113619	CF 1.5kΩ ±5% SRD1/6P
R405L,R	0113677	CF 390kΩ ±5% SRD1/6P
R406L,R	0113651	CF 33kΩ ±5% SRD1/6P
R408L,R	0113661	CF 82kΩ ±5% SRD1/6P
R409	0113631	CF 4.7kΩ ±5% SRD1/6P
R410L,R	0113615	CF 1kΩ ±5% SRD1/6P
R421L,R	0113643	CF 15kΩ ±5% SRD1/6P
R601L,R	0113615	CF 1kΩ ±5% SRD1/6P
R602L,R	0113663	CF 100kΩ ±5% SRD1/6P
R603L,R	0113631	CF 4.7kΩ ±5% SRD1/6P
R604L,R	0113643	CF 15kΩ ±5% SRD1/6P
R651L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R652L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R701L,R	0113623	CF 2.2kΩ ±5% SRD1/6P [for ZS]
	0113615	CF 1k ±5% SRD1/6P [except ZS]
R702L,R	0113663	CF 100kΩ ±5% SRD1/6P
R703L,R	0113607	CF 470Ω ±5% SRD1/6P [except BS, US]
	0113611	CF 680Ω ±5% SRD1/6P [for BS, US]
R704L,R	0113663	CF 100kΩ ±5% SRD1/6P
R705L,R	0129611	CF 2.7kΩ ±5% SRD1/4P
R706L,R	0129611	CF 2.7kΩ ±5% SRD1/4P
R707	0129601	CF 1kΩ ±5% SRD1/4P
⚠R708	1110621	FR 100Ω ±5% RN1/4B
R709	0129617	CF 4.7kΩ ±5% SRD1/4P
⚠R710	1110621	FR 100Ω ±5% RN1/4B
R711L,R	1119029	ME 4.7Ω ±10% RN1B
R714	1119446	ME 2.7kΩ ±10% RN1B
R715	0113659	CF 68kΩ ±5% SRD1/6P
R716	0113667	CF 150kΩ ±5% SRD1/6P
R717L,R	0113293	CF 330Ω ±5% SRD1/2P
R718	0113673	CF 270kΩ ±5% SRD1/6P
R719	0113639	CF 10kΩ ±5% SRD1/6P
R801	0129615	CF 3.9kΩ ±5% SRD1/4P
R802	1119155	ME 22Ω ±10% RN2B
R803	0129615	CF 3.9kΩ ±5% SRD1/4P
⚠R804	1110625	FR 220Ω ±5% SRD1/4P
R805	0129601	CF 1kΩ ±5% SRD1/4P
R806	0129607	CF 1.8kΩ ±5% SRD1/4P
⚠R811	1110601	FR 10Ω ±5% RN1/4B
⚠R813	1110601	FR 10Ω ±5% RN1/4B
R901L,R	0113579	CF 33Ω ±5% SRD1/6P
R902L,R	0113663	CF 100kΩ ±5% SRD1/6P
R903L,R	0113629	CF 3.9kΩ ±5% SRD1/6P
R904	0113625	CF 2.7kΩ ±5% SRD1/6P
R905L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R906L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R907	0113651	CF 33kΩ ±5% SRD1/6P
R909L,R	0113637	CF 8.2kΩ ±5% SRD1/6P
R910L	0113641	CF 12kΩ ±5% SRD1/6P
R910R	0113639	CF 10kΩ ±5% SRD1/6P
R911	0113639	CF 10kΩ ±5% SRD1/6P
R912	0113651	CF 33kΩ ±5% SRD1/6P
R913L,R	0113639	CF 10kΩ ±5% SRD1/6P
R914L,R	0113639	CF 10kΩ ±5% SRD1/6P
R915	0113651	CF 33kΩ ±5% SRD1/6P
R916	0113639	CF 10kΩ ±5% SRD1/6P
R917L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R918L,R	0113639	CF 10kΩ ±5% SRD1/6P
R919L,R	0113663	CF 100kΩ ±5% SRD1/6P
R920	0113647	CF 22kΩ ±5% SRD1/6P
R921	0113647	CF 22kΩ ±5% SRD1/6P
R922	0113639	CF 10kΩ ±5% SRD1/6P
R923L,R	0113633	CF 5.6kΩ ±5% SRD1/6P
R924	0113647	CF 22kΩ ±5% SRD1/6P
R925	0113647	CF 22kΩ ±5% SRD1/6P
R926	0113291	CF 220Ω ±5% SRD1/2P
R927L,R	0113639	CF 10kΩ ±5% SRD1/6P
R928L,R	0113651	CF 33kΩ ±5% SRD1/6P
R929	0113631	CF 4.7kΩ ±5% SRD1/6P
R930	0113657	CF 56kΩ ±5% SRD1/6P
R931L,R	0113659	CF 68kΩ ±5% SRD1/6P
R932L,R	0113633	CF 5.6kΩ ±5% SRD1/6P
R933L,R	0113641	CF 12kΩ ±5% SRD1/6P
R934L,R	0113631	CF 4.7kΩ ±5% SRD1/6P
R935	0113663	CF 100kΩ ±5% SRD1/6P
R936L,R	0113639	CF 10kΩ ±5% SRD1/6P
R937L,R	0113619	CF 1.5kΩ ±5% SRD1/6P
R938L,R	0113585	CF 47Ω ±5% SRD1/6P
R940L,R	0113625	CF 2.7kΩ ±5% SRD1/6P
R943	0113639	CF 10kΩ ±5% SRD1/6P
R944L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R945	0113639	CF 10kΩ ±5% SRD1/6P
R946	0113639	CF 10kΩ ±5% SRD1/6P
R947	0113639	CF 10kΩ ±5% SRD1/6P
R948	0113639	CF 10kΩ ±5% SRD1/6P
R949	0113663	CF 100kΩ ±5% SRD1/6P
R950	0113639	CF 10kΩ ±5% SRD1/6P
R951	0113647	CF 22kΩ ±5% SRD1/6P
R952	0113647	CF 22kΩ ±5% SRD1/6P
R953	0113665	CF 120kΩ ±5% SRD1/6P
R954	0113615	CF 1kΩ ±5% SRD1/6P
R955	0113633	CF 5.6kΩ ±5% SRD1/6P
R956L,R	0113669	CF 180kΩ ±5% SRD1/6P
R957L,R	0113657	CF 56kΩ ±5% SRD1/6P
R958	0113647	CF 22kΩ ±5% SRD1/6P
R959L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R960	0113647	CF 22kΩ ±5% SRD1/6P
R963	0113667	CF 150kΩ ±5% SRD1/6P
R965	0113639	CF 10kΩ ±5% SRD1/6P
R966	0113639	CF 10kΩ ±5% SRD1/6P

SYMBOL NO.	PART NO.	DESCRIPTION
R967L,R	0113647	CF 22kΩ ±5% SRD1/6P
R968	0113639	CF 10kΩ ±5% SRD1/6P
R969	0113631	CF 4.7kΩ ±5% SRD1/6P
R981	0113631	CF 4.7kΩ ±5% SRD1/6P
R982	0113615	CF 1kΩ ±5% SRD1/6P
R983	0113675	CF 330kΩ ±5% SRD1/6P
R984	0113615	CF 1kΩ ±5% SRD1/6P
R985	0113583	CF 47Ω ±5% SRD1/6P
R986	0113631	CF 4.7kΩ ±5% SRD1/6P
R987	0113631	CF 4.7kΩ ±5% SRD1/6P
R988	0113665	CF 120kΩ ±5% SRD1/6P
R989	0113639	CF 10kΩ ±5% SRD1/6P
R990	0113617	CF 1.2kΩ ±5% SRD1/6P
R991	0113649	CF 27kΩ ±5% SRD1/6P
R992	0113567	CF 10Ω ±5% SRD1/6P
R993	0113591	CF 100Ω ±5% SRD1/6P [for ES, BS]
R994	0113295	CF 470Ω ±5% SRD1/2P
R996	0113291	CF 220Ω ±5% SRD1/2P

ICS & TRANSISTORS

IC101	2300601	LA1186N [except ZS]
IC201	2389231	LA1260
IC231	2368431	AN278 [for ZS]
IC301	2300561	LA3361
IC401	2300831	μPC4558C
IC651L,R	2300841	BA3812L
IC701	2301161	STK4142 [except BS, US]
IC701	2301011	STK4122II [for BS, US]
IC901	2301052	BA3416BL
IC902	2300831	μPC4558C
IC903	2301201	HA12086
IC904	2300831	μPC4558C
IC981	2387051	LB1403
Q131	2328286	2SC458LG (D) [for ZS]
Q132	2328803	2SK104 (H) [for ZS]
Q201	0573487	2SC460C [except ZS]
Q801	2317824	2SD880 (O.Y)
Q802	2328273	2SB605LA
Q901L,R	2329453	2SC945PA
Q902	2329453	2SC945PA
Q903L,R	2329453	2SC954PA
Q904	2329453	2SC954PA
Q905L,R	2329453	2SC945PA
Q906L,R	2329453	2SC945PA
Q907L,R	2329453	2SC945PA
Q908L,R	2329453	2SC945PA
Q910	2329453	2SC945PA
Q911	2329453	SSC945PA
Q912	2329453	2SC945PA
Q913	2329453	2SC945PA
Q914	2329183	2SA1015 (GR)
Q915L,R	2329952	2SD655E
Q981	2329453	2SC945PA
Q991	2317782	2SC2235 (Y)

DIODES

D101	2337601	1S2473 [except ZS]
D131	2337601	1S2473 [for ZS]
D132	2337601	1S2473 [for ZS]
D133	2337931	1K60R [for ZS]
D134	2337931	1K60R [for ZS]
D151	2337601	1S2473
D152	2337601	1S2473
D301	2339102	SLP-160C
D331	2338831	SLP-155B
D701	2337601	1S2473
D702	2339001	DS135D
D801	2337461	S4VB20
D802	2339001	DS135
D803	2339001	DS135

SYMBOL NO.	PART NO.	DESCRIPTION
D901	2337601	1S2473
D902	2337601	1S2473
D903	2337601	1S2473
D904	2337601	1S2473
D905	2337601	1S2473
D906	2337601	1S2473
D907	2337601	1S2473
D908	2337601	1S2473
D909	2337601	1S2473
D910	2337601	1S2473
D911	2337601	1S2473
ZD301	2339664	HZ6B-1 [for ZS]
ZD302	2339664	HZ6B-1 [for ZS]
ZD801	2339613	HZ-15-3-FA
ZD802	2339613	HZ-15-3-FA
ZD901	2337613	HZ3A-3
LED981	2339102	SLP-160C
LED982	2398401	SLR-54DC5
LED983	2398401	SLR-54DC5
LED984	2398401	SLR-54DC5
LED985	2398401	SLR-54DC5
LED986	2339102	SLP-160C
LED987	2339102	SLP-160C

VARIABLE RESISTORS

RT131	0150959	20kΩ -(B) [for ZS]
RT132	0150961	100kΩ -(B) [for ZS]
RT301	0150958	10kΩ -(B)
RT901L,R	0150961	100kΩ -(B)
RT902	0158953	2kΩ -(B)
RV901L,R	0166838	10kΩ -(B)
RV601	0166837	250KΩ
RV602L,R	0158781	100kΩ -(B)
RV652L,R	0166831	100kΩ -(B)
RV653L,R	0166831	100kΩ -(B)
RV654L,R	0166831	100kΩ -(B)

COILS

L101	2135262	FM RF coil [except ZS, ES, BS]
L101	2135376	FM RF coil [for ES, BS]
L102	2135253	FM osc coil [for US]
L102	2135493	FM osc coil [for ES, BS]
L102	2135248	FM osc coil [for EW, SA, KS]
L151	2227354	Choke coil 2.2μH [for ES, BS]
L202	2227889	High feq coil
L901L,R	2227991	Choke coil
L991	2136823	Bias OSC coil (85kHz)
T101	2154724	FM IF transformer [except ZS]
T151	2137371	AM ant coil (MW)
T152	2136496	AM osc coil (MW)
T153	2137372	AM ant coil (LW) [for ES, BS]
T154	2136497	AM osc coil [for ES, BS]
T201	2154729	FM discrete coil

MISCELLANEOUS

CP101	2137191	FM band pass filter [except ZS]
CP131	2137301	FM band pass filter [for ZS]
CP301	2136313	Low pass filter [for ZS]

SYMBOL NO.	PART NO.	DESCRIPTION
CF201	2135002	Ceramic filter [for ZS]
CF 202	2135002	Ceramic filter [for ZS]
CF203	2135002	Ceramic filter
CF205	2154761	Ceramic filter
CT101	0282411	Variable capacitor [for US, KS, SA, EW]
CT102	0282411	Variable capacitor [for US, KS, SA, EW]
CT151	0282411	Variable capacitor [for US, KS, SA, EW]
CT152	0282411	Variable capacitor [for US, KS, SA, EW]
CV101	0282411	Variable capacitor [for US, KS, SA, EW]
CV102	0282411	Variable capacitor [for US, KS, SA, EW]
CV151	0282411	Variable capacitor [for US, KS, SA, EW]
CV152	0282411	Variable capacitor [for US, KS, SA, EW]
CT101	0282113	Variable capacitor [for BS, ES]
CT102	0282113	Variable capacitor [for BS, ES]
CV101	0282113	Variable capacitor [for BS, ES]
CV102	0282113	Variable capacitor [for BS, ES]
CV151	0282113	Variable capacitor [for BS, ES]
CV152	0282113	Variable capacitor [for BS, ES]
CT151	0283557	Plastic film adjustable Capacitor [for ES, BS]
CT152	〃	〃 〃
CT153	〃	〃 〃
CT154	〃	〃 〃
CV151	0282382	Capacitor variable [for ZS]
CV152	0282382	Capacitor variable [for ZS]
RV131	0282382	Capacitor variable [for ZS]
⚠S001	2600152	Power switch
⚠S002	2618053	Voltabe selector switch
S101	2600452	2key push switch [for ES, BS]
S201	2600452	2key push switch [for ES, BS]
S201	2600453	1key push switch [except ES, BS]
S601	2600451	4key push switch TUNER
S602	2600451	4key push switch CD
S603	2600451	4key push switch PHONO
S604	2600451	4key push switch TAPE
S605	2600283	1key push switch LOUDNESS
S901	2628982	Slide switch R/P
S902	2600287	3 key push switch TAPE SELECTOR
S903	2600283	1key push switch DOLBY
S991	2629381	Slide switch RIF SW [for ES, BS]
J701	2689551	4P push terminal
J702	2678448	Headphone jack
J981	2678447	Mic jack
J401L,R	2677874	4P Pin jack
J402L,R	2677874	4P Pin jack

SYMBOL NO.	PART NO.	DESCRIPTION
F131	2425561	Tuner pack [for ZS]
⚠F001	2727191	Fuse (T1A-250V) [except BS, US]
⚠F001	2727895	Fuse 1A-125V [for US]
⚠F001	2727730	Fuse T630mA-250V [for BS]
⚠F801	2727193	Fuse (T2A-250V) [except BS, US]
⚠F801	2727893	Fuse 2A-125V [for US]
⚠F801	2727745	Fuse (T2A) [for BS]
⚠PT001	2249612	Power transformer [for SA]
⚠PT001	2249622	Power trans 240V [for BS]
⚠PT001	2249613	Power transformer [for ZS, ES, KS]
⚠PT001	2249621	Power trans 120V [for US]
⚠PT001	2249614	Power transformer [for EW]
LC901L,R	2228103	Dolby filter
LC902L,R	2136791	Bias trap coil
	2527121	TD P.W.B assy [for US]
	2527122	TD P.W.B assy [for BS,ES]
	2527123	TD P.W.B assy [for KS, SA, EW]
	2527124	TD P.W.B assy [for ZS]
	2527131	GE P.W.B assy [for US]
	2527133	GE P.W.B assy [for BS]
	2527134	GE P.W.B assy [for KS]
	2527135	GE P.W.B assy [for ES]
	2527136	GE P.W.B assy [for ZS]
	2527137	GE P.W.B assy [for SA]
	2527138	GE P.W.B assy [for EW]

CABINET CHASSIS ASSEMBLY

1	4469054	Top case
2	3806441	Cassette door (1)
3	3806442	Cassette door (2)
4	3307213	Power button
5	3802051	Power switch rod
6	3307242	GE knob
7	3307201	Push button
8	3307232	Slide knob
9	3307191	Push button
10	3806451	Function button
11	3806452	Function button
12	3806453	Function button
13	3806454	Function button
14	3307281	Push button
15	3307262	Volume knob
16	3307252	REC knob
17	3802002	REC holder
18	4477171	Rear plate [for US]
	4477173	Rear plate [for BS]
	4477174	Rear plat [for KS]
	4477175	Rear plate [for ES]
	4477176	Rear plate [for ZS]
	4477177	Rear plate [for SA]
	4477178	Rear plate [for EW]
19	3927411	Foot
20	4415974	Washier (3.3x8)
21	3161461	Bottom board
22	3802071	Pointer

SYMBOL NO.	PART NO.	DESCRIPTION
23	3346235	Pulley (150)
24	3340322	Spring (M)
25	3368853	REC spring
26	2589322	Mechanism assy (TN-21SW-958)
27	4043751	Front panel assy [for US]
	4043752	Front panel assy [for BK, ES]
	4043753	Front panel assy [for KS, SA, EW]
	4043754	Front panel assy [for ZS]
⚠ 28	2702713	Power cord [for US]
⚠	2749582	Power cord [for BS]
⚠	2749622	Power cord [for SA]
⚠	2748752	Power cord [for ES, ZS, KS]
⚠	2706584	Power supply cord [for EW]
29	4691911	Counter belt
30	4468981	REC lever (B)
31	3368841	REC wire
32	4475821	Eject spring
33	4475831	Eject spring
34	2588921	Counter
35	3805191	Operation button
36	3307317	Operation button
37	3805197	Operation button
38	3805198	Operation button
39	3805199	Operation button
40	3805190	Operation button
41	3806471	Operation button
42	4418841	Clip antenna [for US]
43	4930712	Cord cover [for US]
44	2677911	FM antenna socket [except ZS, US]
45	2658391	Din ant socket [for ZS]
⚠ 46	3913006	Bushing [except EW]
⚠	0043793	Bushing [for EW]
⚠ 47	2618053	Voltage selector switch [for EW]
48	4041711	Slide piece assy
49	0681276	Washer (3.3x10)
50	4408861	Washer
51	4575661	Earth screw
52	4575453	DT bind (with washer)
53	4567432	DT bind head screw (3x8)
54	8691410	BT bind head screw (3x10)
55	8751413	Tapping pan head screw (3.1 x 13)
56	4567412	DT bind head screw (3x8)
57	4575444	4x12 DT bind screw (with Washer)
58	4567411	DT bind head screw (3x6)
59	0741306	Bind screw (2.6x6)
60	4584792	DT bind head screw (2x5)
61	4567432	DT bind head screw (3x8) [for ZS]
62	4567443	DT bind head screw (4x10)
63	8691412	BT bind head screws (3x12)
64	4567415	DT bind head screw (3x14)
65	3931571	Holder ANTENNA
66	3307271	TUNING ASSY
67	3950381	DAMPER ASSY
68	3929692	ROLLER
69	3935291	ROLLER

SYMBOL NO.	PART NO.	DESCRIPTION
70	4585811	Screw

for ACCESSORIES

	2757527	FM antenna [for SA]
	2667922	SIEMENS PLUG [for EW]
	2758411	AM loop antenna
	2749091	US pin cord [for ZS]

HRD-MD28

SYMBOL NO.	PART NO.	DESCRIPTION
		CAPACITORS
C001	0244109	CD 4700pF ±10% 50V
C002	0244173	CD 0.022μF [for ZS] 50V
C101	0275015	MF 0.047μF ±10% 50V
C102	0252802	EL 0.22μF [for ZS] 50V
C103	0208672	CD 33pF ±5% 50V
C104	0252811	EL 1μF [for ZS] 50V
C105	0244173	CD 0.022μF +80 −20% [for ZS] 50V
C106	0208674	CD 39pF ±5% [for ZS] 50V
C107	0208674	CD 39pF ±5% [for ZS] 50V
C108	0244173	CD 0.022μF 50V
C109	0208672	CD 33pF ±5% [for ZS] 50V
C110	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C111	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C112	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C151	0275013	MF 0.022μF ±10% 50V
C152	0244173	CD 0.022μF +80 −20% [for VS, ES (France), BS] 50V
C153	0246418	CD 8pF ±0.25pF [for VS, ES (France), BS] 50V
	0246412	CD 2pF ±0.25pF [except VS, ES (France), BS] 50V
C154	0246456	CD 47pF ±5% [for VS, ES (France), BS] 50V
C155	0268323	PP 510pF ±5% 100V
C156	0228321	ST 270pF ±5% [for VS, ES (France), BS] 50V
C157	0246442	CD 12pF ±5% 50V
C158	0246465	CD 110pF ±5% [for VS, ES (France), BS] 50V
C159	0252811	EL 1μF [for BS, VS, ES(France)] 50V
C160	0244173	CD 0.022μF [for VS, ES(France), BS] 50V
C161	0244173	CD 0.022μF +80 −20% 50V
C201	0244173	CD 0.022μF +80 −20% 50V
C202	0244173	CD 0.022μF +80 −20% 50V
C203	0244173	CD 0.022μF +80 −20% 50V
C204	0209737	CD 0.01μF ±10% 50V
C205	0209737	CD 0.01μF ±10% 50V
C206	0209737	CD 0.01μF ±10% 50V
C207	0252813	EL 3.3μF 50V
C209	0252525	EL 47μF 16V
C210	0209737	CD 0.01μF ±10% 50V
C211	0209737	CD 0.01μF ±10% 50V
C212	0252811	EL 1μF 50V
C213	0208684	CD 100pF ±5% 50V
C214	0209737	CD 0.01μF ±10% 50V
C215	0252813	EL 3.3μF 50V
C217	0244173	CE 0.022μF +80 −20% 50V
C218	0252522	EL 22μF 16V
C219	0209737	CD 0.01μF ±10% 50V
C220	0252521	EL 10μF 16V
C221	0209175	CD 0.047μF +80 −20% 50V
C222	0208676	CD 47pF ±5% 50V
C223	0252813	EL 3.3μF 50V
C224	0252521	EL 10μF 16V
C225	0209731	CD 1000pF ±10% 50V
C226	0209737	CD 0.01μF ±10% 50V
C227	0209175	CD 0.047μF +80 −20% 50V
C228	0252813	EL 3.3μF [for ZS] 50V
C301	0252813	EL 3.3μF 50V
C302	0252525	EL 47μF 16V
C303	0268446	PP 1000pF ±5% 100V
C304	0252805	EL 0.47μF 50V
C305	0252805	EL 0.47μF 50V
C306	0275015	MF 0.047μF ±10% 50V
C307	0252811	EL 1μF 50V
C308	0209736	CD 6800pF ±10% [except US, CS] 50V
	0240212	CD 0.01μF ±10% [for CS, US] 25V
C309	0209736	CD 6800pF ±10% [except US, CS] 50V
	0240212	CD 0.01μF ±10% [for CS, US] 25V
C310	0209733	CD 2200pF ±10% 50V
C311	0209733	CD 2200pF ±10% 50V
C312	0252813	EL 3.3μF 50V
C313	0252813	EL 3.3μF 50V
C314	0252522	EL 22μF 16V
C315	0252813	EL 3.3μF 50V
C316	0208526	CD 560pF ±5% [for ZS] 50V
C317	0252531	EL 100μF 16V
C318	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C319	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C320	0248684	CD 100pF ±5% [except ZS] 50V
C351	0252813	EL 3.3μF 50V
C401L,R	0209731	CD 1000pF ±10% [for ZS] 50V
C402L,R	0252813	EL 3.3μF 50V
C403L,R	0208684	CD 100pF ±5% 50V
C404L,R	0252325	EL 47μF 10V
C405L,R	0240211	CD 8200pF ±10% 25V
C406L,R	0240204	CD 2200pF ±10% 25V
C407L,R	0252813	EL 3.3μF 50V
C409	0244173	CD 0.022μF +80 −20% 50V
C410	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C411	0244173	CD 0.022μF +80 −20% 50V
C421L,R	0208692	CD 220pF ±5% [for ZS] 50V
C501	0209733	CD 2200pF ±10% 50V
C502	0252880	EL 4.7μF 50V
C503	0252802	EL 0.22μF [for VS, ES(France), BS] 50V
C504	0240222	CD 0.068μF ±10% [for VS, ES(France), BS] 25V
C505	0252811	EL 1μF [for VS, ES(France), BS] 50V
C506	0244173	CD 0.022μF +80 −20% 50V
C551	0252813	EL 3.3μF 50V
C552	0252815	EL 4.7μF 50V
C554	0252815	EL 4.7μF 50V
C555	0244173	CD 0.022μF 50V
C556	0252242	EL 2200μF 6.3V
C558	0246499	CD 24pF ±5% 50V
C559	0246449	CD 24pF ±5% 50V
C561	0248672	CD 33pF ±5% 50V
C562	0208664	CD 15pF ±5% 50V
C563	0244173	CD 0.022μF +80 −20% 50V
C564	0252325	EL 47μF 10V
C601L,R	0252811	EL 1μF 50V
C602L,R	0240214	CD 0.015μF ±10% 25V
C603	0248678	CD 56pF ±5% [for ZS] 50V
C604	0244101	CD 1000pF ±10% [except ZS] 50V
C651L,R	0252812	EL 2.2μF 50V
C652L,R	0240218	CD 0.033μF ±10% 25V
C653L,R	0252805	EL 0.47μF 50V
C654L,R	0244171	CD 0.01μF +80 −20% 50V
C655L,R	0252801	EL 0.1μF 50V
C656L,R	0240205	CD 2700pF ±10% 25V
C657L,R	0240218	CD 0.033μF ±10% 25V
C658L,R	0209726	CD 820pF ±10% 50V
C659L,R	0240209	CD 5600pF ±10% 25V
C660L,R	0208692	CD 220pF ±5% 50V
C661L,R	0252813	EL 3.3μF 50V
C662L,R	0209731	CD 1000pF ±10% 50V
C663L,R	0252522	EL 22μF 16V
C664L,R	0252813	EL 3.3μF 50V
C666	0244173	CD 0.022μF +80 −20% [for ZS] 50V
C701L,R	0252813	EL 3.3μF 50V
C702L,R	0208692	CD 220pF ±5% [except ZS] 50V
C703L,R	0208696	CD 330pF ±5% [except ZS] 50V
C703L,R	0209731	CD 1000pF ±10% [for ZS] 50V
C704L,R	0252225	EL 47μF [except ES (France)] 6.3V
C704L,R	0252325	EL 47μF [for ES (France)] 10V
C705L,R	0230612	CC 10pF ±5% 50V
C706L,R	0252625	EL 47μF 25V
C707	0252825	EL 47μF 50V
C708	0252825	EL 47μF 50V
C709	0252825	EL 47μF 50V
C710L,R	0276011	MF 0.1μF ±10% 50V
C711	0255011	EL 47μF [except ES(France)] 50V
	0252825	EL 47μF [for ES(France)] 50V
C712	0255011	EL 47μF [except ES(France)] 50V
	0252825	EL 47μF [for ES(France)] 50V
C713	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C714L,R	0244173	CD 0.022μF +80 −20% [for ZS] 50V
C715L,R	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C716	0255011	EL 47μF [except ES(France)] 50V
C716	0252825	EL 47μF [for ES(France)] 50V
C717	0244173	CD 0.022μF +80 −20% 50V
C718	0244173	CD 0.022μF +80 −20% [for ZS] 50V
C720	0244163	CD 2200pF +80 −20% [for US, CS] 50V
C801	0244173	CD 0.022μF +80 −20% 50V
C802	0244173	CD 0.022μF +80 −20% 50V
C805	0255001	EL 4700μF 40V
C806	0255001	EL 4700μF 40V
C807	0252632	EL 220μF 25V
C809	0244173	CD 0.022μF +80 −20% 50V
C810	0244173	CD 0.022μF +80 −20% 50V
C811	0252542	EL 2200pF 16V
C812	0252535	EL 470μF 16V
C815	0252625	EL 47μF 25V
C817	0244171	CD 0.01μF +80 −20% [for ZS] 50V
C901L,R	0209731	CD 1000pF ±10% 50V
C902L,R	0209731	CD 1000pF ±10% 50V
C903L,R	0248736	CD 330pF ±10% 50V
C904L,R	0248736	CD 330pF ±10% 50V
C905L,R	0252231	EL 100μF 6.3V
C906L,R	0240218	CD 0.033μF ±10% 25V
C907	0252522	EL 22μF 16V
C908	0252525	EL 47μF 16V
C909L,R	0240216	CD 0.022μF ±10% 25V
C910L,R	0252813	EL 3.3μF 50V
C912L,R	0252813	EL 3.3μF 50V
C913L.R	0209731	CD 1000pF ±10% 50V
C914L,R	0252813	EL 3.3μF 50V
C915L,R	0209733	CD 2200pF ±10% 50V
C916	0252813	EL 3.3μF 50V
C917L,R	0252813	EL 3.3μF 50V
C918L,R	0240212	CD 0.01μF ±10% 25V
C919L,R	0240214	CD 0.015μF ±10% 25V
C920L,R	0252807	EL 0.68μF 50V
C921L,R	0252812	EL 2.2μF 50V
C922L,R	0252813	EL 3.3μF 50V
C923	0252232	EL 220μF 6.3V
C924	0252531	EL 100μF 16V
C926	0209737	CD 0.01μF ±10% 50V
C927L,R	0240218	CD 0.033μF ±10% 25V
C928L,R	0209721	CD 330pF ±10% 50V
C929L,R	0240212	CD 0.01μF ±10% 25V
C930L,R	0240215	CD 0.018μF ±10% 25V
C932L,R	0240221	CD 0.056μF ±10% 50V
C933L,R	0240215	CD 0.018μF ±10% 25V
C934L,R	0240219	CD 0.039μF ±10% 25V
C935L,R	0252813	EL 3.3μF 50V
C936	0252522	EL 22μF 16V
C981	0252813	EL 3.3μF 50V
C982	0209723	CD 470pF ±10% 50V
C983	0252813	EL 3.3μF 50V
C984	0252521	EL 10μF 16V
C985	0208686	CD 190pF ±5% 50V
C991	0274016	MF 6800pF ±10% 50V
C992	0275012	MF 0.015μF ±10% 50V
C993	0252525	EL 47μF 16V
C994	0268435	MF 0.015μF ±5% 100V
C995L,R	0208692	CD 220pF ±5% 50V
C996	0209732	CD 1500pF ±10% [for VS, ES(France), BS] 50V
		RESISTORS
⚠R001	0139008	CO 2200kΩ ±10% RC1/2GF [for CS, US]
R101	0113625	CF 2.7kΩ ±5% SRD1/6P
R102	0113663	CF 100kΩ ±5% SRD1/6P
R103	0113591	CF 100 ±5% SRD1/6P [for ZS]
R104	0113663	CF 100kΩ ±5% SRD1/6P [for ZS]
R105	0113639	CF 10kΩ ±5% SRD1/6P [for ZS]
R106	0113617	CF 1.2kΩ ±5% SRD1/6P [for ZS]
R107	0113663	CF 100kΩ ±5% SRD1/6P [for ZS]
R108	0129561	CF 100Ω ±5% SRD1/4P [for ZS]
R108	0113599	CF 220Ω ±5% SRD1/6P [for US, CS]
R108	0113595	CF 150Ω ±5% SRD1/6P [except ZS, US, CS]
R109	0113591	CF 100Ω ±5% SRD1/6P [for ZS]
R151	0113365	CF 1kΩ ±5% SRD1/2P
R152	0113639	CF 10kΩ ±5% SRD1/6P
R153	0113639	CF 10kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R154	0113639	CF 10kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R155	0113671	CF 220kΩ ±5% SRD1/6P
R156	0113663	CF 100kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R157	0113671	CF 220kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R158	0113623	CF 2.2kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R160	0113631	CF 4.7kΩ ±5% SRD1/6P [for VS, ES±France), BS]
R201	0113603	CF 330Ω ±5% SRD1/6P
R202	0113615	CF 1kΩ ±5% SRD1/6P [for ZS, VS]
R202	0113623	CF 2.2kΩ ±5% SRD1/6P [except ZS, VS]
R203	0113605	CF 390Ω ±5% SRD1/6P
R204	0113619	CF 1.5kΩ ±5% SRD1/6P
R205	0113639	CF 10kΩ ±5% SRD1/6P
R208	0113597	CF 180Ω ±5% SRD1/6P
R209	0113639	CF 10kΩ ±5% SRD1/6P
R210	0113591	CF 100Ω ±5% SRD1/6P
R211	0113651	CF 33kΩ ±5% SRD1/6P [except SA, CS, US]
R211	0113643	CF 15kΩ ±5% SRD1/6P [for SA, CS, US]
R212	0113639	CF 10kΩ ±5% SRD1/6P
R213	0113645	CF 18kΩ ±5% SRD1/6P
R214	0113647	CF 22kΩ ±5% SRD1/6P
R215	0113639	CF 10kΩ ±5% SRD1/6P
R216	0113659	CF 68KΩ ±5% SRD1/6P
R217	0113615	CF 1kΩ ±5% SRD1/6P
R218	0113639	CF 10kΩ ±5% SRD1/6P
R219	0113639	CF 10kΩ ±5% SRD1/6P
R220	0113639	CF 10kΩ ±5% SRD1/6P
R221	0113627	CF 3.3kΩ ±5% SRD1/6P
R222	0113635	CF 6.8kΩ ±5% SRD1/6P [except ZS, VS]
	0113637	CF 8.2kΩ ±5% SRD1/6P [for ZS, VS]
R223	0113663	CF 100kΩ ±5% SRD1/6P
R224	0113663	CF 100kΩ ±5% SRD1/6P
R231	0113603	CF 330Ω ±5% SRD1/6P [except VS, ZS]
R301	0113647	CF 22k ±5% SRD1/6P [for ZS]
R302	0113613	CF 820Ω ±5% SRD1/6P
R303	0113635	CF 6.8kΩ ±5% SRD1/6P
R304	0113615	CF 1kΩ ±5% SRD1/6P
R305	0113633	CF 5.6kΩ ±5% SRD1/6P
R306	0113633	CF 5.6kΩ ±5% SRD1/6P
R307	0113631	CF 4.7kΩ ±5% SRD1/6P
R308	0113631	CF 4.7kΩ ±5% SRD1/6P
R309	0113663	CF 100kΩ ±5% SRD1/6P
R310	0113663	CF 100kΩ ±5% SRD1/6P
R311	0113605	CF 390Ω ±5% SRD1/6P
R312	0113623	CF 2.2kΩ ±5% SRD1/6P
R314	0113663	CF 100kΩ ±5% SRD1/6P
R315	0113665	CF 120kΩ ±5% SRD1/6P
R316	0113651	CF 33kΩ ±5% SRD1/6P
R317	0113631	CF 4.7kΩ ±5% SRD1/6P
R318	0113615	CF 1kΩ ±5% SRD1/6P
R319	0113595	CF 150Ω ±5% SRD1/6P
R351	0113639	CF 10kΩ ±5% SRD1/6P
R352	0113647	CF 22kΩ ±5% SRD1/6P
R353	0113665	CF 47kΩ ±5% SRD1/6P
R354	0113591	CF 100Ω ±5% SRD1/6P
R355	0113639	CF 10kΩ ±5% SRD1/6P
R356	0113633	CF 5.6kΩ ±5% SRD1/6P
R401L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R402L,R	0113655	CF 47kΩ ±5% SRD1/6P
R403L,R	0113619	CF 1.5kΩ ±5% SRD1/6P
R405L,R	0113677	CF 390Ω ±5% SRD1/6P
R406L,R	0113651	CF 33kΩ ±5% SRD1/6P
R408L,R	0113661	CF 82kΩ ±5% SRD1/6P
R409	0113631	CF 4.7kΩ ±5% SRD1/6P
R410L,R	0113615	CF 1kΩ ±5% SRD1/6P
R421L,R	0113643	CF 15kΩ ±5% SRD1/6P
R501	0113623	CF 2.2kΩ ±5% SRD1/6P
R503	0113635	CF 6.8kΩ ±5% SRD1/6P
R504	0113611	CF 680Ω ±5% SRD1/6P
R505	0113631	CF 4.7kΩ ±5% SRD1/6P
R506	0113635	CF 6.8kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R507	0113615	CF 1kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R508	0113639	CF 10kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R509	0113635	CF 6.8kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R510	0113639	CF 10kΩ ±5% SRD1/6P
R511	0113639	CF 10kΩ ±5% SRD1/6P
R512	0113639	CF 10kΩ ±5% SRD1/6P
R513	0113639	CF 10kΩ ±5% SRD1/6P
R514	0113639	CF 10kΩ ±5% SRD1/6P
R516	0113653	CF 39kΩ ±5% SRD1/6P
R517	0113653	CF 39kΩ ±5% SRD1/6P
R518	0113653	CF 39kΩ ±5% SRD1/6P
R519	0113653	CF 39kΩ ±5% SRD1/6P
R520	0113653	CF 39kΩ ±5% SRD1/6P
R521	0113653	CF 39kΩ ±5% SRD1/6P
R522	0113639	CF 10kΩ ±5% SRD1/6P [for EW] ±
R523	0113655	CF 47kΩ ±5% SRD1/6P [for EW] ±
R524	0113663	CF 100kΩ ±5% SRD1/6P [for EW]
R526	0113615	CF 1kΩ ±5% SRD1/6P
R527	0113615	CF 1kΩ ±5% SRD1/6P
R528	0113659	CF 68kΩ ±5% SRD1/6P
R529	0113615	CF 1kΩ ±5% SRD1/6P
R530	0113655	CF 47kΩ ±5% SRD1/6P
R531	0113655	CF 47kΩ ±5% SRD1/6P
R532	0113655	CF 47kΩ ±5% SRD1/6P
R533	0113639	CF 10kΩ ±5% SRD1/6P
R534	0113655	CF 47kΩ ±5% SRD1/6P
R535	0113639	CF 10kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R536	0113667	CF 150kΩ ±5% SRD1/6P [for VS, ES(France), BS]
R551	0113627	CF 3.3kΩ ±5% SRD1/6P
R552	0113631	CF 4.7kΩ ±5% SRD1/6P
R553	0113287	CF 100Ω ±5% SRD1/6P
R554	0113657	CF 56kΩ ±5% SRD1/6P
R555	0113575	CF 22Ω ±5% SRD1/6P
R556	0113615	CF 1kΩ ±5% SRD1/6P

SYMBOL NO.	PART NO.	DESCRIPTION
R557	0113639	CF 10kΩ ±5% SRD1/6P
R558	0113623	CF 2.2kΩ ±5% SRD1/6P
R559	0113287	CF 100Ω ±5% SRD1/6P
R561	0113667	CF 150kΩ ±5% SRD1/6P
R562	0113615	CF 1kΩ ±5% SRD1/6P
R563	0129569	CF 220Ω ±5% SRD1/4P
R564	0129573	CF 330Ω ±5% SRD1/4P
R565	0113639	CF 10kΩ ±5% SRD1/6P [for EW]
R601L,R	0113615	CF 1kΩ ±5% SRD1/6P
R602L,R	0113663	CF 100kΩ ±5% SRD1/6P
R603L,R	0113631	CF 4.7kΩ ±5% SRD1/6P
R604L,R	0113643	CF 15kΩ ±5% SRD1/6P
R651L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R652L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R701L,R	0113623	CF 2.2kΩ ±5% SRD1/6P [for ZS]
R701L,R	0113615	CF 1kΩ ±5% SRD1/6P [except ZS]
R702L,R	0113663	CF 100kΩ ±5% SRD1/6P
R703L,R	0113607	CF 470Ω ±5% SRD1/6P
R704L,R	0113663	CF 100kΩ ±5% SRD1/6P
R705L,R	0129611	CF 2.7kΩ ±5% SRD1/4P
R706L,R	0129611	CF 2.7kΩ ±5% SRD1/4P
R707	0129601	CF 1kΩ ±5% SRD1/4P
⚠R708	1110621	FR 100Ω ±5% RN1/4B
R709	0129617	CF 4.7kΩ ±5% SRD1/4P
⚠R710	1110621	FR 100Ω ±5% RN1/4B
⚠R711L,R	1119029	FR 4.7Ω ±10% RN1B
R714	1119446	M0 2.7kΩ ±10% RS1B
R715	0113659	CF 68kΩ ±5% SRD1/6P
R716	0113667	CF 150kΩ ±5% SRD1/6P
R717L,R	0113293	CF 330Ω ±5% SRD1/2P
R718	0113673	CF 270kΩ ±5% SRD1/6P
R719	0113639	CF 10kΩ ±5% SRD1/6P
R801	0129613	CF 3.3kΩ ±5% SRD1/4P
R802	1119155	MF 22Ω ±10% RN2B
R803	0129615	CF 3.9kΩ ±5% SRD1/4P
⚠R804	1110625	FR 220Ω ±5% SRD1/4P
R806	0129607	CF 1.8kΩ ±5% SRD1/4P
⚠R811	1110601	FR 10Ω ±5% RN1/4B
⚠R812	1110601	FR 10Ω ±5% RN1/4B
⚠R813	1110601	FR10Ω ±5% RN1/4B
R901L,R	0113579	CF 33Ω ±5% SRD1/6P
R902L,R	0113663	CF 100kΩ ±5% SRD1/6P
R903L,R	0113629	CF 3.9kΩ ±5% SRD1/6P
R904	0113625	CF 2.7kΩ ±5% SRD1/6P
R905L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R906L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R907	0113651	CF 33kΩ ±5% SRD1/6P
R909L,R	0113637	CF 8.2kΩ ±5% SRD1/6P
R910L	0113641	CF 12kΩ ±5% SRD1/6P
R910R	0113639	CF 10kΩ ±5% SRD1/6P
R911	0113639	CF 10kΩ ±5% SRD1/6P
R912	0113651	CF 33kΩ ±5% SRD1/6P
R913L,R	0113639	CF 10kΩ ±5% SRD1/6P
R914L,R	0113639	CF 10kΩ ±5% SRD1/6P
R915	0113651	CF 33kΩ ±5% SRD1/6P
R916	0113639	CF 10kΩ ±5% SRD1/6P
R917L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R918L,R	0113639	CF 10kΩ ±5% SRD1/6P
R919L,R	0113663	CF 100kΩ ±5% SRD1/6P
R920	0113647	CF 22kΩ ±5% SRD1/6P
R921	0113647	CF 22kΩ ±5% SRD1/6P
R922	0113639	CF 10kΩ ±5% SRD1/6P
R923L,R	0113633	CF 5.6kΩ ±5% SRD1/6P
R924	0113647	CF 22kΩ ±5% SRD1/6P
R925	0113647	CF 22kΩ ±5% SRD1/6P
R926	0113291	CF 220Ω ±5% SRD1/2P
R927L,R	0113639	CF 10kΩ ±5% SRD1/6P

SYMBOL NO.	PART NO.	DESCRIPTION
R928L,R	0113651	CF 33kΩ ±5% SRD1/6P
R929	0113631	CF 4.7kΩ ±5% SRD1/6P
R930	0113657	CF 56kΩ ±5% SRD1/6P
R931L,R	0113659	CF 68kΩ ±5% SRD1/6P
R932L,R	0113633	CF 5.6kΩ ±5% SRD1/6P
R933L,R	0113641	CF 12kΩ ±5% SRD1/6P
R934L,R	0113631	CF 4.7KΩ ±5% SRD1/6P
R935	0113663	CF 100kΩ ±5% SRD1/6P
R936L,R	0113639	CF 10kΩ ±5% SRD1/6P
R937L,R	0113619	CF 1.5kΩ ±5% SRD1/6P
R938L,R	0113583	CF 47Ω ±5% SRD1/6P
R940L,R	0113625	CF 2.7kΩ ±5% SRD1/6P
R941L,R	0113631	CF 4.7kΩ ±5% SRD1/6P
R942L,R	0113619	CF 3.3kΩ ±5% SRD1/6P
R943	0113639	CF 10kΩ ±5% SRD1/6P
R944L,R	0113627	CF 3.3kΩ ±5% SRD1/6P
R945	0113639	CF 10kΩ ±5% SRD1/6P
R946	0113639	CF 10kΩ ±5% SRD1/6P
R947	0113639	CF 10kΩ ±5% SRD1/6P
R948	0113639	CF 10kΩ ±5% SRD1/6P
R949	0113663	CF 100kΩ ±5% SRD1/6P
R950	0113639	CF 10kΩ ±5% SRD1/6P
R951	0113647	CF 22kΩ ±5% SRD1/6P
R952	0113647	CF 22kΩ ±5% SRD1/6P
R953	0113665	CF 120kΩ ±5% SRD1/6P
R954	0113615	CF 1kΩ ±5% SRD1/6P
R955	0113633	CF 5.6kΩ ±5% SRD1/6P
R956L,R	0113669	CF 180kΩ ±5% SRD1/6P
R957L,R	0113657	CF 56kΩ ±5% SRD1/6P
R958	0113647	CF 22kΩ ±5% SRD1/6P
R959L,R	0113623	CF 2.2kΩ ±5% SRD1/6P
R960	0113647	CF 22kΩ ±5% SRD1/6P
R962	0113667	CF 150kΩ ±5% SRD1/6P
R963	0113667	CF 150kΩ ±5% SRD1/6P
R964	0113639	CF 10kΩ ±5% SRD1/6P
R965	0113639	CF 10kΩ ±5% SRD1/6P
R966	0113639	CF 10kΩ ±5% SRD1/6P
R967L,R	0113647	CF 22kΩ ±5% SRD1/6P
R968	0113639	CF 10kΩ ±5% SRD1/6P
R969	0113631	CF 4.7kΩ ±5% SRD1/6P
R981	0113631	CF 4.7kΩ ±5% SRD1/6P
R982	0113615	CF 1kΩ ±5% SRD1/6P
R983	0113675	CF 330k ±5% SRD1/6P
R984	0113615	CF 1kΩ ±5% SRD1/6P
R985	0113583	CF 47Ω ±5% SRD1/6P
R986	0113631	CF 4.7kΩ ±5% SRD1/6P
R987	0113631	CF 4.7kΩ ±5% SRD1/6P
R988	0113665	CF 120kΩ ±5% SRD1/6P
R989	0113639	CF 10kΩ ±5% SRD1/6P
R990	0113617	CF 1.2kΩ ±5% SRD1/6P
R991	0113649	CF 27kΩ ±5% SRD1/6P
R992	0113567	CF 10Ω ±5% SRD1/6P
R993	0113591	CF 100Ω ±5% SRD1/6P [for VS, ES(France), BS]
R994	0113295	CF 470Ω ±5% SRD1/2P
R995	0113291	CF 220Ω ±5% SRD1/2P
R996	0113228	CF 82Ω ±5% SRD1/2P

ICs & TRANSISTORS

IC201	2368431	AN278
IC202	2300412	LA1265S
IC301	2300561	LA3361
IC401	2300831	μPC4558C
IC501	2300861	μPD1713AG-015
IC502	2387611	BA6251
IC651L,R	2300841	BA3812L
IC701	2301161	STK4142II
IC901	2301052	BA3416BL
IC902	2300831	μPC455BC
IC903	2301201	HA12086

SYMBOL NO.	PART NO.	DESCRIPTION
IC904	2300831	μPC4558C
IC981	2387051	LB1403
Q101	2328286	2SC45BLG (D) [for ZS]
Q102	2328803	2SK104H [for ZS]
Q151	2328286	2SC45BLG (D) [for VS, ES(France), BS]
Q152	2328286	2SC45BLG (D) [for VS, ES(France), BS]
Q201	2328286	2SC458LG (D)
Q301	2328286	2SC458LG (D)
Q302	2328286	2SC458LG (D)
Q303	2329183	2SA1015 GR
Q304	2328286	2SC458LG (D)
Q351	2328286	2SC458LG (D)
Q352	2328286	2SC458LG (D)
Q501	2328286	2SC458LG (D)
Q502	2328286	2SC458LG (D)
Q503	2328286	2SC458LG (D) [for VS, ES(France), BS]
Q504	2328286	2SC458LG (D) [for VS, ES(France), BS]
Q505	2329183	2SA1015 (GR)
Q506	2328286	2SC458LG (D)
Q507	2329183	2SA1015 (GR)
Q508	2329183	2SA1015 (GR) [for EW]
Q509	2328286	2SC458LG (D) [for EW]
Q510	2329183	2SA1015 (GR)
Q511	2329183	2SA1015 (GR)
Q512	2329183	2SA1015 (GR) [for VS, ES(France), BS]
Q513	2329183	2SA1015 (GR) [for VS, ES(France), BS]
Q551	2329183	2SA1015 (GR)
Q561	0573486	2SC460 (B)
Q801	2317824	2SD880 (Y,O)
Q802	2328273	2SB605LA
Q901L,R	2329453	2SC945PA
Q902	2329453	2SC945PA
Q903L,R	2329453	2SC945PA
Q904	2329453	2SC945PA
Q905L,R	2329453	2SC945PA
Q906L,R	2329453	2SC945PA
Q907L,R	2329453	2SC945PA
Q908L,R	2329453	2SC945PA
Q909L,R	2329453	2SC945PA
Q910	2329453	2SC945PA
Q911	2329453	2SC945PA
Q912	2329453	2SC945PA
Q913	2329453	2SC945PA
Q914	2329183	2SA1015 (GR)
Q915L,R	2329952	2SD655 (E) [except ES(France)]
Q915L,R	2329951	2SD655 (D) [for ES(France)]
Q981	2329453	2SC945PA
Q991	2317782	2SC2235 (Y)

DIODES

D101	2337601	1S2473
D102	2337601	1S2473
D103	2337931	1K60R [for ZS]
D104	2337931	1K60R [for ZS]
D151	2337601	1S2473
D152	2337601	1S2473
D153	2397321	KV1260
D154	2397321	KV1260 [for VS, ES(France), BS]

SYMBOL NO.	PART NO.	DESCRIPTION
D155	2337601	1S2473 [for VS, ES(France), BS]
D156	2337601	1S2473 [for VS, ES(France), BS]
D157	2337601	1S2473 [for VS, ES(France), BS]
D158	2337601	1S2473 [for VS, ES(France), BS]
D159	2337601	1S2473 [for VS, ES(France), BS]
D301	2337601	1S2473
D501	2337601	1S2473
D502	2337601	1S2473
D503	2337601	1S2473
D504	2337601	1S2473
D505	2337601	1S2473
D506	2337601	1S2473
D507	2337601	1S2473
D508	2337601	1S2473
D509	2337601	1S2473
D510	2337601	1S2472 [except US, CS]
D511	2337601	1S2473
D512	2337601	1S2473
D513	2337601	1S2473 [except SA, CS, US]
D514	2337601	1S2473
D515	2337601	1S2473
D516	2337601	1S2473
D551	2337151	1S2076A
D552	2337601	1S2473
D553	2337601	1S2473
D701	2337601	1S2473
D702	2339001	DS135D
D801	2337461	S4VB20
D802	2339001	DS135D
D803	2339001	DS135D
D901	2337601	1S2473
D902	2337601	1S2473
D903	2337601	1S2473
D904	2337601	1S2473
D905	2337601	1S2473
D906	2337601	1S2473
D977	2337601	1S2473
D908	2337601	1S2473
D909	2337601	1S2473
D910	2337601	1S2473
D911	2337601	1S2473
ZD551	2339657	HZ5C-1
ZD552	2339664	HZ6B-1
ZD553	2337292	HZ-9B
ZD801	2339613	HZ-15-3-FA
ZD802	2339613	HZ-15-3-FA
ZD901	2337613	HZ3A-3
LED551	2398451	BACK LIGHTING
LED552	2378451	BACK LIGHTING
LED553	2398451	BACK LIGHTING
LED554	2378451	BACK LIGHTING
LED555	2398452	LN0513CP8
LED981	2339102	SLP-160C
LED982	2398401	SLR-54DCS
LED983	2398401	SLR-54DCS
LED984	2398401	SLR-54DCS
LED985	2398401	SLR-54DCS
LED986	2339102	SLP-160C

VARIABLE RESISTORS

RV601	0166837	250kΩ
RV602L,R	0158781	100kΩ -(B)
RV651L,R	0166831	100kΩ -(B)
RV652L,R	0166831	100kΩ -(B)

SYMBOL NO.	PART NO.	DESCRIPTION
RV653L,R	0166831	100kΩ -(B)
RV654L,R	0166831	100kΩ -(B)
RV655L,R	0166831	100kΩ -(B)
RV901L,R	0166838	10kΩ -(B)
RT301	0150958	10kΩ -(B) [except ES(France)]
RT301	0199331	10kΩ -(B) [for ES(France)]
RT901L,R	0150961	100kΩ -(B) [except ES(France)]
RT901L,R	0199334	100kΩ [for ES(France)]
RT902	0158953	2kΩ -(B) [except ES(France)]
RT902	0199333	2kΩ [for ES(France)]

COILS

L151	2127273	AM ant coil (MW)
L152	2137374	AM ant coil (LW) [for VS, ES(France), BS]
L153	2136493	AM osc coil (MW)
L154	2136494	LW osc coil (MW) [for VS, ES(France), BS]
L991	2136823	Bias osc coil
L901L,R	2227991	Choke coil
T201	2154493	AM IF transformer
T202	2137033	FM discriminater coil

MISCELLANEOUS

CP101	2137301	FM band pass filter [for ZS]
C557	0259891	Super capacitor 0.022F
CP301	2136313	Lowpass filter [for ZS]
X551	2789281	Crystal oscillator
S001⚠	2600152	Power switch
S002⚠	2618053	Voltage selector switch [for EW]
S501	2639971	Tact switch FM
S502	2639971	Tact switch AUTO
S503	2639682	Tact switch P4
S504	2639682	Tact switch P3
S505	2639682	Tact switch P2
S506	2639682	Tact switch P1
S507	2639971	Tact switch MW
S508	2639682	Tact switch MEMORY
S509	2639682	Tact switch P5
S510	2639971	Tact switch DOWN
S511	2639971	Tact switch UP
S512	2639971	Tact switch LW [for VS, ES(France), BS]
S513	2629381	Slide switch [for EW]
S514	2639971	Tact switch +10 [for BS, ES(France)]
S601	2600451	4 key push switch TUNER
S602	2600451	4 key push switch CD
S603	2600451	4 key push switch PHONO
S604	2600451	4 key push switch TAPE
S605	2600283	1 key push switch LOUDNESS SW
S901	2628982	Slide switch R/P
S902	2600286	3 key push switch
S903	2600283	1 key push switch DOLBY
S991	2629381	Slide switch RIF SW [for VS, ES(France), BS]
S903	2600283	1 keypush switch DOLBY
S991	2629381	Slide switch RIF SW [for VS, ES(France), BS]
J401L,R	2677874	Pin jack 4P
J402L,R	2677874	Pin jack 4P

SYMBOL NO.	PART NO.	DESCRIPTION
J701	2689551	4P Push terminal
J702	2678448	Headphone jack
J981	2678447	Mic jack
	2780082	LCD
	3802041	LED Holder
PT001⚠	2249617	Power transformer 120V [for CS]
PT001⚠	2249612	Power transformer 240V [for SA, BS]
PT001⚠	2249613	Power transformer 220V [for VS, ZS, KS, ES(France)]
PT001⚠	2249611	Power transformer 120V [for US]
PT001⚠	2249614	Power transformer W [for EW]
F101	2425461	Tuner pack [except ZS]
F101	2425561	Tuner pack [for ZS]
F001⚠	2727191	Fuse T1A 250V [except BS, CS, US]
F001⚠	2727964	Fuse 2.5A 125V [for CS, US]
F001⚠	2727742	Fuse T1A 250V [for BS]
F801⚠	2727193	Fuse T2A 250V [except BS, CS, US]
F801⚠	2727745	Fuse T2A 250V [for BS]
F801⚠	2727893	Fuse 2A 125V [for CS, US]
MF201	2135002	Ceramic filter
MF202	2135002	Ceramic filter [for ZS, VS]
MF203	2135002	Ceramic filter
MF205	2154762	Ceramic filter
LC901L,R	2228103	Dolby filter
LC902L,R	2136791	Bias trap coil
	2527091	TD P.W.B assy [for US, CS]
	2527093	TD P.W.B assy [for BS]
	2527094	TD P.W.B assy [for KS]
	2527095	TD P.W.B assy [for VS]
	2527096	TD P.W.B assy [for ZS]
	2527097	TD P.W.B assy [for SA]
	2527098	TD P.W.B assy [for EW]
	2527099	TD P.W.B assy [for ES(France)]
	2527101	GE-PA P.W.B assy [for US]
	2527102	GE-PA P.W.B assy [for CS]
	2527103	GE-PA P.W.B assy [for BS]
	2527104	GE-PA P.W.B assy [for KS]
	2527105	GE-PA P.W.B assy [for VS]
	2527106	GE-PA P.W.B assy [for ZS]
	2527107	GE-PA P.W.B assy [for SA]
	2527108	GE-PA P.W.B assy [for EW]
	2527109	GE-PA P.W.B assy [for ES(France)]

PARTS NO.	PART NO.	DESCRIPTION
CABINET CHASSIS ASSEMBLY		
1	4469054	Top case
2	3806441	Cassette door (1)
3	3806442	Cassette door (2)
4	3307213	Power button
5	3802051	Power switch rod
6	3307242	GE knob
7	3307201	Push button
8	3307232	Slide knob
9	3307191	Push knob
10	3806451	Function button
11	3806452	Function button
12	3806453	Function button
13	3806454	Function button
14	3307262	Volume knob
15	4041711	Slide piece assy
16	3307294	Pre-set knob [except BS, ES(France)]
	3307295	Pre-set knob [for BS, ES(France)]
17	3307303	Tuning button
18	3307252	REC knob
19	3802002	REC holder
20	4477201	Rear plate [for US]
	4477202	Rear plate [for CS]
	4477203	Rear plate [for BS]
	4477204	Rear plate [for KS]
	4477205	Rear plate [for VS]
	4477206	Rear plate [for ZS]
	4477207	Rear plate [for SA]
	4477208	Rear plate [for EW]
	4477209	Rear plate [for ES(France)]
21	3950381	Damper assy
22	4043781	Front panel assy [except VS, ES(France), BS]
	4043782	Front panel assy [for VS, ES(France), BS]
23	3927411	Foot
24	4415974	Washer (3.3x8)
25	3368853	REC spring
26	3161461	Bottom board
27	0681276	Washer (3.3x10)
28	3931571	Holder ANTENNA
29	4584792	DT bind head screw (2x5)
30	4691911	Counter belt
31	4468981	REC lever (B)
32	3368841	REC wire
33	4475821	Eject spring
34	4475831	Eject spring
35	2588921	Counter
36	3805191	Operation button
37	3307317	Operation button
38	3805197	Operation button
39	3805198	Operation button
40	3805199	Operation button
41	3805190	Operation button
42	3806471	Operation button
⚠ 43	2702713	Power supply cord [for CS, US]
⚠	2749582	Power supply cord [for BS]
⚠	2749622	Power supply cord [for SA]
⚠	2748752	Power supply cord [for ZS, VS, KS]
⚠	2707709	Power supply cord [for ES(France)]
⚠	2706584	Power supply cord [for EW]
44	4418841	Clip antenna [for CS, US]
45	4930712	Cord cover [for CS, US]
46	2677911	FM antenna socket [except ZS, CS, US]
47	2658391	Din ant socket [for ZS]
⚠ 48	3913006	Bushing [except EW]
⚠	0043793	Bushing [for EW]
49	4575661	Earth screw
50	4408861	Washer
51	2589322	Mechanism assy (TN-21SW-985)
52	8691412	BT bind head screw (3x12)
53	4575453	4x12 DT bind screw (with washer)
54	4567432	DT bind head screw (3x8)
55	8691410	BT bind head screw (3x10)
56	4567411	DT bind head screw (3x6)
57	8751413	Tapping pan head screw (3.1x13)
58	4567443	DT bind head screw (4x10)
59	4575444	4x12 DT bind screw (with washer)
60	4567415	DT bind head screw (3x4)
for ACCESSORIE		
	2757527	FM antenna [for SA]
	2667922	Siemens plug [for HL, EW]
	2758411	AM loop antenna

REPLACEMENT PARTS LIST

CASSETTE CHASSIS (TN-21SW-985)

PARTS NO.	PART NO.	DESCRIPTION
1	4818991	MAIN base assy
2	4818992	Switch plate
3	4839371	Push button actuator assy
4	4823651	REC button lever
5	4823661	PLAY button lever
6	4823671	RWD button lever
7	4823681	FF button lever
8	4823691	STOP button lever
9	4823701	PAUSE button lever
10	4818990	RWD lever
11	4833451	PAUSE lever
12	4819132	PAUSE lever spring
13	4819133	PAUSE stopper
14	4850692	Button lever spring
15	4820215	SUB chassis
16	4819007	Button lever spring
17	4820217	PLAY button lever spring
18	4831614	Head panel
19	4819008	Actuator spring
20	4819009	AUTO lever
21	4819000	AUTO lever spring
22	4820214	Button lever spring
23	4832091	Leaf switch
24	4832522	Screw
25	4820219	Head panel
26	4832451	RWD button lever
27	4819014	Head base
28	4832412	Sensing plate assy
29	4832452	FF button lever
30	4820221	Head panel
31	4832482	SUB plate
32	4819006	PR stopper
33	4819045	Screw
34	4819017	Spring
35	4839372	Pinch roller arm assy
36	4850693	Pinch roller arm spring
37	4833455	Pause bracket
38	4831610	Metal guide
39	4839373	RF pulley arm assy
40	4820225	RF pulley arm spring
41	4835913	RF arm collar screw
42	4820227	Belt
43	4839374	Flywheel assy
44	4839375	Flywheel assy
46	4839377	TAKE UP gear plate assy
47	4839378	TAKE UP roller gear
48	4819020	TG plate spring
49	4839379	FF gear
50	4839370	Back tension spring
51	4842431	Supply reel assy
52	4839381	TAKE UP reel assy
53	4832421	Record safety lever
54	4839382	Back tension spring
55	4835915	Motor bracket
56	4819039	Motor rubber
57	4819533	Motor collar screw
59	4833457	Belt
60	4848086	Mat
61	4833452	Record plate
62	4819043	Eject slide lever
63	4819044	Eject slide lever spring
64	4819036	Pack spring
65	2557522	P head
66	2557521	R/P head
67	2557531	E head
68	4831657	Motor assy
69	4820218	Switch actuator spring
70	4819186	Screw (2x3)
71	4819063	Tapping screw (2x3)
72	4819068	Tapping screw (2x4)
73	4819607	Bind tapping screw (2x5)
74	4819191	Tapping screw (2x6)
75	4819611	Screw (2x6)
76	4839383	Anti vibration felt mat
77	4819060	Screw (2x7)
78	4819600	Azimuth screw
79	4819202	Camera screw (2x4.5)
80	4832471	Camera screw (M2x2.5)
81	4832472	Camera screw (M1.7x4.5)
82	4850697	Camera screw (1.7x3)
83	4850698	Washer (1.55)
84	4819078	Washer (1.55)
85	4832432	Washer (2.05)
86	4819528	Head base
87	4831623	Operation lever
88	4831624	B frame
89	4819232	Button lever shaft
90	4819072	Screw (2x7)
91	4833463	Lever
92	4833464	Lever
93	4833465	Special screw
94	4833460	Collar (B)
95	4833467	Spring
96	4832102	Switch leaf
97	4833468	Collar
98	4850699	Lever
99	4835917	Switch bracke
100	4468971	REC lever (A)
101	4850690	Leaf switch
102	4850694	Leaf switch
103	4819195	Tapping screw (2x5)
104	4833472	Tapping screw (2x6)
105	4691911	Counter belt
106	4819529	E.H. spring
107	4850702	Washer (2.4)
108	4819544	Cap screw (2x8)

Player (HT-MD28)

SYMBOL NO.	PART NO.	DESCRIPTION
1	4817521	EP adaptor
2	4835737	Cam gear assy
3	4835738	Platter assy
4	4835739	Return link assy
5	4835665	Starting lever
6	4835730	Pick-up stand assy
7	4835741	Tone arm assy
8	4835668	Knob shaft
9	4835669	Oil shaft
10	4835660	Press set
11	4835671	Lifter
12	4835675	Pendulum set
13	3307471	Push button
14	3307461	Push button
15	4835745	Dust cover assy
16	4835676	Platter shaft assy
17	4835670	Press plate
18	4835681	Hanging plate for motor
19	4835682	Pendulum
20	4835683	Hinge assy
21	4835743	Motor assy
22	4835693	Micro switch
23	4835694	Push switch
24	4835697	DC board
25	4835695	5P Connector ass'y
26	4835696	P.C. board
27	4835703	Screw
28	4835704	Screw
29	4835706	Screw
30	4835707	Screw
31	4835708	Screw
32	4835709	Screw
33	4835700	Screw
34	4835712	Screw
35	4835713	Screw
36	4835715	Screw
37	4835716	Spring
38	4835717	Spring
39	4835718	Spring
40	4835719	Steel cramper
41	4835721	Spring
42	4835723	Pendulum
43	4835724	Belt
44	4835725	Rubber tube
45	4835726	Rubber foot (L)
46	4835728	Rubber mat
47	4817549	Washer
48	4835729	Washer
49	4817557	Washer
50	4835731	Washer
51	4835734	Washer
52	4835735	Washer
53	4835736	Steel ball
54	4850561	Player base assy

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